

CHURCH-BUILDING NEWS.

Darlington.—The chief stone of a new church for St. Paul's district, Darlington, has been laid. There remain only about 600*l.* to be raised to meet the cost of erection. The designing and carrying out of the new work have been placed by the committee in the hands of Mr. J. P. Pritchett, of Darlington, architect. The church is designed in the Early Decorated style, and consists of nave, 75 ft. by 26 ft.; chancel, 28 ft. by 22 ft.; aisles, each 75 ft. by 14 ft.; vestry, organ-chamber, and a tower and spire at the south-west angle of the nave, 130 ft. high. The west end, which faces Durham-road, has a doorway in the centre, with a large three-light window over it; the end of the north aisle being relieved by a two-light window, and the end of the south aisle being finished by the tower. The sides of the aisles are pierced by two-light windows, separated by buttresses, and a lofty clearstory is similarly arranged. The east end is filled by a large four-light window, the sides of the chancel by long two-light windows, and each gable is surmounted by an ornamental cross. The tower is divided into four stages, the first being a porch, the second the ringing chamber, the third the clock-chamber, the fourth the belfry, and a spire surmounts the whole. Internally, the nave is separated from the aisles by five arches, springing from pillars, with moulded bases and caps, which will be relieved by a little carving. The roof of the nave is lofty, and open to the ridge; that of the chancel "wagon-headed" or arched. The seats are all to be of pitch pine, open, with low slanting backs and moulded ends, and provide accommodation for 600 adults. The floors of the chancel and passages will all be paved with Mosaic tiles. The pulpit and font are to be of Caen stone; the reading-desk of oak; the communion-rails of iron and brass. The windows are all to be filled with cathedral tinted glass, having coloured borders. The woodwork will be stained and varnished. The church will be warmed by hot water or warm air, and lighted by gas standards. The site, which consists of an acre of ground standing high and open, is surrounded on all sides by streets, from which it will be separated by iron railing. The contracts have been taken by the following local tradesmen:—Masons', slaters', plasterers' work, Mr. W. Lynes; joiners' work, Mr. T. Teakstone; plumbing and glazing, Messrs. Russell & Sons; painters' work, Mr. Stephen Harrow. The amount of contract is 3,304*l.* 16*s.* 7*d.*, and the total cost, including iron railing, lighting, warming, and professional charges, is expected to amount to about 4,000*l.*

Preston.—The new tower of St. Mark's Church has been formally opened. Mr. William Johnson, of Howden, Yorkshire, brother of the incumbent, was the architect. The tower has been for some time completed externally. It is built of Longridge stone and is a lantern one, in the lower part consisting of eight three-light windows, two on each side, divided by buttresses and glazed with cathedral glass. Under each transept is filled in with tracery. The belfry windows above are divided into two lights by a transept, and the tracery on the top is filled in with cathedral glass. At the south-east corner is a staircase by which to ascend to the top of the tower. The louvres of the upper lights are of Westminster slate. The gablet rising over each belfry window is intersected about midway by a parapet pierced with quatrefoils, and terminating with a finial. There are octagonal pinnacles at each corner, canopied at the base of the spiral part of the pinnacle, likewise terminated by a finial and wrought-iron vane. The total cost of this addition to the church is from 1,250*l.* to 1,300*l.*

Brent, Devon.—The parish church of Brent, in South Devon, which is at present in a very decayed state and much overlaid with white-wash, is about to be completely restored, under the direction of Mr. Hine, of Plymouth. The building is chiefly Perpendicular, with a tower and some other portions of earlier construction. The chancel contains a Late Decorated sedilia and an elaborate oak screen, the carving and colour of which will be restored. The roofs and seats throughout will be new, and much of the stonework will be removed. The chancel and passages are to be paved with tile and slate, and the pulpit is to be of stone. Like so many even of the late churches in the West of England, Brent Church possesses a Norman font, which will be placed near the western entrance, on a granite base, cruciform on plan. The cost of the various works will be about 1,700*l.*

Walworth Common.—St. Stephen's Church, in Villa-street, the laying of the foundation-stone of which we recently noticed, will be in the Gothic style of Early Italian character. The walls will be built of brick, and faced inside and out with Beart's perforated white bricks. The arches of the nave supporting the clearstory will be constructed with white moulded bricks and red terra-cotta, which have been specially manufactured by the Whitwick Colliery Brick Company, Leicester, from the designs of the architects, Messrs. Jarvis & Son. The dressings to doors, windows, buttresses, &c., will be of Bath stone. The church will consist of a nave, north and south aisles, and chancel. The nave will be 81 ft. long, 30 ft. wide, and 50 ft. high, lighted by ten two-light clearstory windows, and covered with a close-boarded arch-shaped roof. The north and south aisles will be 81 ft. long and 8 ft. wide, with lean-to roofs. At the west end of the building will be a spacious porch or narthex the whole width of the nave. There will be also a porch in the north aisle facing the new road. The chancel will be 28 ft. deep, 22 ft. wide, and 36 ft. high, terminated by a three-sided apse. It will have a vaulted roof constructed of concrete, supported on moulded stone ribs. There will be three lancet windows in each of the seven bays of the chancel, and beneath these there will be a deeply-recessed arcade. At the south-west corner of the church there will be a tower, 22 ft. square, which will rise to a height of 120 ft., and be constructed to receive a peal of bells.ittings will be provided for 614 persons on the ground-floor, and 153 in a west gallery. The seats will be open, of deal stained and varnished. The contract is taken for the works, exclusive of the tower, by Mr. Tarrant, of the New Kent-road, for the sum of 5,186*l.*

York.—A reredos, composed of painted tiles from the studio of Mr. J. W. Knowles, York, has recently been erected in St. Sampson's Church. The central portion, which is inclosed in a carved stone frame, is designed to form three quatrefoil panels, divided by small elongated niche panels. In the centre quatrefoil, on a diapered blue ground, is the Agnus Dei, and in the side quatrefoils are angels. In the small panels a conventional treatment of the rose and lily is painted on a chocolate ground. The space under the central portion of reredos, which occurs at each end of the communion-table, is of a diaper in maroon, yellow, blue, and white. The wall space on each side of reredos, extending to the chancel side walls, is also of tiles, on which is painted diaper work. The stonework and fixing of the tiles were executed by Mr. Cole, of York.

Horsmonden.—A chapel of ease to St. Margaret's, Horsmonden, has been opened and consecrated by the Bishop Suffragan, of Dover. The chapel is situate in the most central spot obtainable in the parish, more than two miles from the parish church. The site was the free gift of Mr. Ernest Wilson. The chapel is built of brick, and consists of nave, apse, chancel, and vestry, the bell-turret being over the chancel arch. It will seat about 150 persons. For the exterior walls stock bricks are used, with bands of red and black bricks, the arches of doors and windows being of the same material. For the interior walls red bricks are used, and relieved by strings of white and black brick. The style of architecture adopted is the Early Decorated. The ceiling of the chancel is panelled and moulded, and coloured with a groundwork of blue, with gold stars. At the junction of the apse the mouldings radiate with gold lines from a centre bearing the sacred monogram. In the cornice is painted an inscription from "The Litany," commencing with "By the Mystery of Thy Holy Incarnation." The chancel is lighted by six single-light windows, the centre one being filled in with stained glass by O'Connor, representing the Crucifixion; it has been presented by the Dowager Lady Marriott. It is proposed to fill in the remaining windows with glass, illustrative of the inscription in the cornice above. On the north side of the chancel is the vestry, divided from the former by an archway, terminating with moulded corbels. The organ, by Messrs. Lewis & Co., of London, fills up the archway, and has an oak case, with spotted metal pipes. The chancel is seated stallwise, with wainscot oak stalls. The chancel arch has a span of 17 ft., and springs from corbels, consisting of polished Greek marble and carved capitals, terminated with figures of angels. The floors are laid with Minton's tiles. The roof of the nave has all the rafters framed alike. The

seats are of a plain character, and, together with all the woodwork in this part of the church, are stained and varnished. What has been completed was planned by Mr. Robert Wheeler, of Tunbridge Wells, architect, and executed by Mr. Anscomb, of Maidstone; the carving by Mr. Earp, of Lambeth.

Youlgreave.—The restoration of the parish church is drawing towards completion. The roofs had been neglected for many years. The lead had been patched over and over again, but the rain came through in streams, and this, of course, kept the whole of the oak beams continually wet, and consequently decaying. When contracts were entered into, and the work commenced, the worst fears were realised. Nearly all the rafters were decayed, the boarding under the lead entirely, and many of the main beams were in a very critical state. It was determined, however, to retain every portion of the old work that could be retained. A sort of framework of iron was therefore placed above the old oak roof, having iron beams over the old oak ones, to which the latter were secured by large iron bolts. All the intermediate timbers were similarly secured. The decayed rafters were all removed and new ones inserted, and the whole reboarded and covered with new lead. The aisle roofs were, fortunately, not in such bad condition, but were all stripped, the decayed portions cut out, and new oak inserted; and were reboarded and covered with lead. With the limited funds in hand it was impossible to attempt the reconstruction of the chancel roof. In this emergency his grace the Duke of Devonshire was appealed to,—already a donor of nearly 800*l.* to the restoration fund,—and he at once directed the work to be finished as it ought to be, and undertook to defray the whole cost of this portion. What is, in effect, a new roof, has been put to the chancel, in which the old beams and other portions of the old roof are plainly visible from the darker colour of the oak. The chancel walls are lined with ashlar. A new east window has been inserted. The levels of the chancel have been raised. The floor is all laid with encaustic tiles, interspersed with bands of white stone. An attempt has been made to introduce colour in the lower portion of the chancel walls by the use of tiles. They are a sort of majolica ware. The rest of the church has been paved with tiles, with wood floor under the seats, and a heating apparatus has been placed in a vault under the church, by Haden, of Trowbridge.

Rochdale.—The foundation stone of a new church at Facit, near Rochdale, to be dedicated to St. John, has been laid. The design for the church comprises a nave, chancel, transept, baptistry, south-west tower and spire, vestry, and organ-chamber. The building is to be of stone, mainly from an adjoining quarry. Although by the same architects,—Messrs. Medland & Henry Taylor, of Manchester,—the design differs essentially from the other new Rochdale churches.

Ashford (Derbyshire).—The little village church of Ashford, according to the *Derbyshire Advertiser*, has recently, with the exception of the tower, been rebuilt, mainly through the liberality of Lord George Cavendish, M.P. The old building possessed little architectural or antiquarian interest, and it was, besides, in so dilapidated a condition, that its reconstruction had become a work of necessity. The Tudor feeling in the old church has been maintained throughout the new work. The roofs are open-timbered, covered with tiles, and asphalted and boarded underneath. The chancel roof is, of course, the most ornate. On the south side of the church is a stone porch, a new and much-needed feature. The heads of the windows are all more or less traceried, the pattern being varied according to the position of the windows. The windows themselves are filled with glass of a yellowish tint, in small diamond panes. The old west gallery has been removed, and the tower-arch, under which is the font, has been opened out into the church. The walls are built of grey limestone, and the windows, doors, and other parts, of the yellowish local sandstone. The chancel arch is supported on corbels with carved caps, the shafts being of the Duke's red marble. The church-being of the Duke's red marble, and new oak yard-wall has also been rebuilt, and new oak gates, with suitable stone piers, provided. The contract was taken by Mr. Joseph Brown, of Matlock Bridge. The architects were Messrs. Medland & Henry Taylor, of Manchester.

Ashford (Kent).—The restoration of the chancel of the parish church has been begun by a local firm, under the direction of Mr. Ewan Christian, architect to the Ecclesiastical Com-

missioners. The east window is to be restored and reglazed. Many of the parishioners have expressed a wish that it should be filled with stained glass. The vicar has obtained a design of the Ascension from Messrs. Lavers, Barrand, & Westlake. The cost would probably be about 400l.

Bishampton, near Pershore.—Excepting the tower, the old church of Bishampton has been swept away. To rebuild and furnish the body of the church the total expense has been 2,000l. The tender for taking down and rebuilding the edifice was 1,509l. 10s. This, which was accepted, was by Mr. Griffiths, of Eldersfield, near Tewkesbury; the highest tender being 1,877l. Mr. Preedy, of London, was the architect. The style adopted is the Perpendicular, and the material is stone from Inkberrow, with Bath stone facings. The new church consists of chancel, with vestry on its north side (also capable of containing a small organ or harmonium), nave without aisles, and the western tower opening into the nave. The old Norman fragments are preserved in the new structure, namely, the doorways, north and south, and some deeply splayed lights in the nave walls. The east and west windows are of three lights, traceried heads, and the side windows are of one, two, and three lights, square-headed. The Norman doorway on the north is blocked up, the principal entrance being by the south porch, which is a stone structure, having a two-light window on each side, stone benches, an open timber roof, and an exterior door of open wire lattice-work for ventilation. The roofs of chancel and nave are nearly of the same height, and are both of open timber-work, the principals of which rest on moulded and carved brackets. The floor of the whole church is covered with Lugwardine tiles, of rich patterns in red, black, and buff.

Knowle.—The foundation-stone of a new church has been laid by the mayor at Knowle. The sum raised having now reached 2,400l., the permanent building has been begun. Messrs. Ponton & Gough are the architects; and Mr. W. Brock is the contractor. The church is to be in the Byzantine style, and will be principally built of brick, both inside and out, with coloured stone marble, and tiles worked into the columns of the arches and the floor. The extreme size will be 120 ft. by 44 ft., and the designs provide for a sanctuary or apse, organ-chamber on the north, and two vestries on the south side of the chancel. There is to be a tower 92 ft. high at the south-west corner of the church, and a porch on the south-east. The chancel, as well as the nave, is to be 30 ft. wide; the other part of the width is devoted to aisles, which will be used simply as passages. The church will be lighted by windows on both sides, filled with ornamental glass. The sanctuary will be partly lined with marble, and the fittings of the same; red Aberdeen granite will be used in the columns of the chancel, some of which will be circular and others octagonal. There will be inlaid ornamental work between the arches. It is in contemplation to paint the dome of the sanctuary with a picture of "The Last Judgment," and to have other paintings and freestone bas-reliefs beneath the windows. The ceiling will also be decorated in colours. The roof will be covered with Bridgewater tiles, and the tower with green Westmoreland slates. There will be an oriel window in the west end, in harmony with the other parts of the building. The total estimated cost of the church is 5,000l. The money already collected will suffice for the erection of the sanctuary and two bays of the nave. A temporary junction of the new with the old building will then be effected, and service be conducted in this enlarged space till funds shall justify the completion of the structure. Owing to the irregular slope of the ground, the floor of the sanctuary and chancel is supported on iron girders laid on stone arches, and the space beneath, which will hold a couple of hundred people, will be found useful for practising the choir and for parochial meetings. So far the work has already progressed.

STAINED GLASS.*

Long Sutton Church.—Messrs. Ward & Hughes, of London, have been engaged in placing a coloured glass window in the altar end of this church. In the top division of the circle, in the tracery of the window, are portrayed two triangles intertwined, representing the Highest, the Holy Trinity, the Triune God. In the centre of these triangles is a brilliant star, beaded in vermilion, the Star of Bethlehem. In three of

the divisions of the circle are represented angels adoring the Holy Trinity. In the other two divisions of the circle are, on the left, the Dove to represent the Holy Ghost, and on the right, the Lamb of God. At the base of the circle, on the left, is an alpha, on the right an omega, and beneath them the monograms of I.H.S. and X.P. Below the tracery each of the centre lights is surmounted by a star. In the left the Holy Ghost, in the figure of a dove, is seen descending on the Saviour's head, on whom John the Baptist is pouring out of a shell the water of baptism, whilst the virgin mother is seen seated below. In the centre light, on the left of the cross on which Christ is giving up the Ghost, is represented the centurion supporting the Roman standard; below him St. John; opposite to him, at the foot of the cross, is the virgin mother, and above her are soldiers and a turbaned chief. In the lower compartment, on the left, is represented the Adoration of the Magi; in the centre, the Last Supper; and on the right, the Angel at the Sepulchre, as saying to the two Marys, "He is not here, but risen." The Latin inscription at the base signifies that the window is dedicated by his widow to the memory of John Bailey, surgeon.

Holy Trinity Church, Lickey (Birmingham).—A three-light window of stained glass has just been fixed above the altar in this church. The subjects portrayed are emblematical of Faith, Hope, and Charity; the illustration of Charity being in the centre, with the sacred monogram above, and underneath the arms of the late Baroness Windsor. The work was executed by Mr. Camm, of Smethwick, formerly principal designer to Messrs. Chance, and cost between 70l. and 80l.

St. Stephen's at Barbourne.—This church has been further beautified by the insertion of a stained-glass window at the east end of the south aisle. The window is of three lights, trefoil-headed, and in the tracery above are three quatrefoils. The principal subject spreads over the three lights, being John the Baptist preaching in the Wilderness. He is surrounded by a group of men, women, and children, soldiers and civilians, all in the act of listening attentively to his admonitions. In the quatrefoils above are the Lamb of God and two angels. The artists were Messrs. Lavers & Barrand.

St. Jude's, Wolverhampton.—A memorial has just been erected in St. Jude's, Tettenhall-road, by Mr. Mander. The window is situated at the east end. It is, in accordance with the architecture of the church, of the Decorated period, and illustrates, in a series of canopied panels, the Life, Passion, and Glory of our Lord. The arrangement of the subjects is as follows:—On the lower tier, the Annunciation, Nativity, the Finding in the Temple, and Baptism; on the upper, the Agony in the Garden, Carrying the Cross, and the Crucifixion and the Resurrection; whilst in the tracery is the Ascension, which occupies the whole space, our Lord being represented with attendant Angels, the Virgin Mary and Twelve Apostles standing in groups below. The work was designed and executed by Messrs. Lavers, Barrand, & Westlake, of London, at a cost of 200l.

FROM SCOTLAND.

Kelso.—Alterations are at present being made, by direction of the Duke of Roxburgh, at the Abbey of Kelso, which will greatly improve its appearance. For many years this structure has been disfigured by a stable built against its walls. The property of which the stable is a part was purchased recently by the Duke of Roxburgh, who has now caused the removal of the stable and of an old wall, so that one of the finest views of the abbey is now again to be opened up. This abbey is one of the oldest of the Scottish abbeys of which remains of any great extent exist, having been founded by King David I., in 1128.

Miscellaneous.

The Tower of St. John's Church, Cardiff. At a vestry meeting the parishioners have resolved to rebuild one of the turrets of this tower, and have requested Mr. Waring, the borough surveyor, to make an estimate and advertise for tenders. The cost, it was stated, of rebuilding, would be about 80l. or 100l.; while its repairs for a few years would be 25l. to 30l.

Refusal to Consecrate a Church.

An unusual scene of excitement occurred at a new and elaborately-finished church in West Derby, about three miles from Liverpool, which has just been erected at the sole expense of Mrs. Reade, a wealthy lady in the neighbourhood, and which was to have been consecrated by the Bishop of Chester. At the last moment the bishop refused to consecrate the edifice. The walls, roofs, and almost all parts of the church are artistically decorated, together with full-length paintings of the apostles, prophets, and other characters in Scripture history, as well as a large number of allegorical figures. The nave is divided from the chancel by an oak screen, which is decorated in gold and colours, whilst the roof and walls of the chancel itself are even more elaborately decorated, and the altar-piece, which rivals in its costliness and beauty the best works of Mediæval times, consists of richly-carved and gilt woodwork, with scenes from the Passion of our Lord, from His betrayal to the visit of the Marys to the sepulchre. The bishop is said to have expressed his strong disapprobation of these decorations as out of place in such an edifice, more especially the altar-piece, and refuses to consecrate the church until it is removed, with several other portions of the decorations. It is stated that the donor of the church declines to permit any of the decorations to be removed, and threatens to resort to measures to enforce the consecration of the church as it now appears. The cost of the edifice amounts to about 30,000l. It has been erected from designs furnished by Mr. G. F. Bodley, of London, architect.

To India in Four Minutes.—The opening of telegraphic communication direct with India has been inaugurated by the Prince of Wales, at Arlington-street, Piccadilly, in the presence of some seven hundred members of the scientific, the political, and the fashionable world, when the Prince conversed freely with the King of Portugal, the Khedive of Egypt, and the Viceroy of India; sending messages to and receiving answers from Lisbon, Cairo, and India, in the course of a few minutes. The communication was through the Falmouth, Gibraltar, and Malta, and the British Indian cable lines. When Lord Mayo's message came, soon after 12 p.m. in London, it was dated Simla, 5.4 a.m. His Excellency had been roused from his bed in the middle of the night,—"or to-morrow morning, isn't it?" as one inquirer remarked, confusedly,—"to pass compliments with his Royal Highness and the gay crowd in Arlington-street. This was the climax of the meeting. Communication was also made, on the other hand, with the President of the United States; and had one been made with California, nearly the whole globe might have been girt in much less time than in forty minutes by the slow Fairies. The actual time occupied by the messages from India to London is said to have been four minutes and two seconds, but we suspect a little exaggeration here.

Railway Matters.—The Great Western railway authorities have provided comfortable barouche and Brougham cabs at Paddington, which ply for hire at the rate of 9d. per mile, or 2s. 6d. per hour.—Mr. Brassey, the contractor, is about to proceed with the construction of a railway from Berlin to Stralsund.—A new system of mountain railway has lately been laid down in Hungary. The line requires no permanent way at all. Square bearers of oak, 8 in. thick and 14 in. broad, are laid on the ground, and only at rare intervals cross sleepers are used. On the two edges of the bearers are rails only 2 in. broad, and so thin that they only weigh 1 lb. per foot. The trucks run on a pair of wheels 8 in. in diameter. The bodies of the trucks are three times the width of the rails, and placed so low on the wheels that they have just room to move. This system was originally proposed by an Englishman. The cost is about 200l. per mile.—The use of steel rails for railways is increasing. The "life" of a steel rail is reckoned to be five times as long as that of an iron rail, or, according to United States engineers, in all about forty years.

Value of Land at Stoke Newington.

Nearly five acres of freehold land, with a frontage to the Green-lanes, and an approach from Albion-road, were brought to the hammer in one lot by Messrs. Debenham, Tewson, & Farmer, and after a spirited competition the property was knocked down at 7,550l., or upwards of 1,500l. per acre.

Opening of a New Cotton Mill at Over.

The opening of a new cotton-mill at Over has been signalled by public rejoicings there. Like most mills, it is parallelogrammic in form, brick built, and covers six times the space of the old mill. It is six stories high, the large rooms being 105 ft. by 115 ft., and the others 60 ft. by 18 ft. The approach to the large rooms at the eastern end of the building, the one which will be used by the workpeople, is by a stone staircase in a projecting semicircular tower, which is about 71 ft. high, and rises some 4 ft. or 5 ft. above the six ridges of the slated roof. At the top of this tower is a cistern which supplies a lavatory on each landing, and would also be useful in case of fire. Besides the doors at the eastern ends of the rooms, there is a communication with the smaller rooms at the western end of the building, where there is also a stone staircase. The rooms are all well lighted, and for the purpose of ventilation the top row of panes of some of the windows form sashes which can be opened. Adjoining the main building are the engine-sheds, which will receive two pairs of engines of 120-horse power. Beyond these sheds is a circular chimney-stack, 19 ft. across the base, and rising to a height of 169½ ft., with a cap at the top 14 ft. in diameter. The total cost of the building and machinery will exceed 100,000*l.*, and it is hoped that employment will be afforded to 600 persons. The building was planned by the proprietor, Mr. Haigh, and erected by a Stoke contractor.

Royal Italian Opera, Covent Garden.

The new opera, "Esmeralda," has not been received by the musical press so warmly as it deserved to be, and the result is some little carelessness about it out of doors. The public are at times very unreasonable: they cry out for novelty, and when it is given neglect it. Signor Campana is not a Rossini or a Meyerbeer, but he has composed a very good and agreeable opera, including many charming things, and, set forth as it is by four such singers as Mdlle. Patti, Mdlle. Scalchi, M. Naudin, and Signor Graziani, the result is unexceptionable. The quartet in the first act, the air "Son galante e capitano," sung by Naudin, and "É ver Son Zingara," and "Visse al Mondo un Capitano," both sung by Patti, to mention no others, lift up the house to enthusiasm every night it is played. Mdlle. Patti was perhaps never heard to greater advantage. Some excellent scenery has been painted for the opera, which we have no hesitation in calling a genuine success.

The Sanitary Condition of Wigan: Government Complaint.—On Thursday, at a special meeting of the Wigan Public Health Committee, a letter was read from the Medical Department of the Privy Council, in which a very severe censure was conveyed with regard to the manner in which the sanitary regulations of the town are conducted. The letter stated that it was evident to their lordships that very serious sanitary defects were frequent in the district of the Board, which had, with very grave results, neglected its duty in some very material points, and it was recommended, therefore, that in future there should be a regular and frequently recurring inspection of the houses and domestic offices throughout the town, efficient and peremptory action against every nuisance that is discovered, the proper removal of excrementitious matter, and the appointment of a medical officer. After some discussion, the Board resolved to appoint a medical officer at 50*l.* per year.

Rochester Castle and Grounds.—It is understood that the ruins of Rochester Castle and the adjacent extensive grounds have been let to the corporation of that city, on a long lease, at a rental of 250*l.* per annum. The castle grounds will be immediately converted into a public park for the use of the inhabitants of the city, who have subscribed a considerable sum towards the preliminary expenses. It is to be hoped that nothing will be done to lessen the archaeological value of the castle.

Sheffield Architectural and Archaeological Society.—A small party of the members of this society had, on Tuesday, a very delightful excursion to Stow and Torksey, in Lincolnshire. At the former place the president read a paper on the history and architectural features of the venerable church, and the party afterwards adjourned, by invitation, to the vicarage, where they were most kindly and hospitably entertained by the vicar and his family.

Society for Improving the Position of the Labouring Classes.

The annual meeting of the members of this society was held at Willis's Rooms, under the presidency of the Earl of Shaftesbury. The report stated that the house for single men in George-street, Bloomsbury, comprised an average of eighty-five inmates. The Streatham-street, Bloomsbury, house for families, contained an average population of 222. The model lodgings in Portpool-lane, Gray's-inn-road; the Hatton-garden house for single men; the renovated lodging-house, Charles-street, Drury-lane; the renovated dwellings in Wild-court, Drury-lane; and Tyndall's-buildings, Gray's-inn-road, had received an increased number of tenants. The total amount received from all sources in 1869 amounted to the sum of 5,937*l.* 6*s.* 10*d.*, and after providing for all items of expenditure there remained a balance of 697*l.* 18*s.* 10*d.* in hand. On the motion of the Rev. J. B. Owen, seconded by Canon Conway, the report was adopted.

Royal Academy.—On Tuesday night the annual *conversazione* was held at the Royal Academy. From half-past nine to half-past eleven the arrivals were incessant, and, according to precedent, the guests were received by the president, Sir Francis Grant. On occasions of this kind an examination of the pictures does not seem to enter into the philosophy of the friends of the Academicians, but from the entire absence of overcrowding, every facility was at hand for those who preferred to form an exception to the general rule. A *conversazione* on such an extensive scale would be incomplete without the attraction of music, and at frequent intervals throughout the evening a portion of the Grenadier Guards' band, under the conductorship of Mr. D. Godfrey, gave selections. Refreshments were served in the first suite of rooms, and the arrangements generally were admirable.

Bow-street Police-court.—Attention is very properly being called to the unsuitability of this building, in which the increasing business of the court is carried on, and which has been for years a subject for continual complaint. The only approach is a long narrow passage, about 6 ft. in width, and the complainants, witnesses, solicitors, and others attending on business have often to fight their way through a mob to get access to the magistrate. The only waiting-room for the public is a small apartment about 12 ft. square; and in this room prosecutors, defendants, witnesses, and professional men are expected to find accommodation. The necessity of a new court, with open yard for the prisoners' van, proper waiting-rooms, &c., was never more manifest than now, and, even on sanitary grounds, has become a public necessity.

The North Oxfordshire Archaeological. This society met, on the 23rd ult., at Shipton, and proceeded by Swinbrooke and Asthall to Burford, where, after visiting the church and priory, bridge and old hostelry, they dined, numbering little less than twenty. Papers and discussions followed, closing a very successful meeting. Shipton-under-Wychwood (subtus Wychwood), on Domesday Scipton, in early times was a place of considerable consequence from its vicinity to Woodstock and Langley. In the latter (a chapelry to Shipton) at the time of the survey Edward Couppa had a mural mansion, one of the twenty belonging to Earl Algar. The remains of what is called King John's Palace are yet traceable.

Saltire Almshouse Chapel.—A little chapel has recently been made out of one of the Almshouses, at Saltire, in which it is intended to hold religious services on week days for the old people. It is situate on the north-west corner of the square, and has been fitted by order of Sir Titus Salt, and will hold comfortably about seventy persons. The place has been formally opened for divine worship, and a tea given by Mrs. Titus Salt, to fifty-one of the old almshouse tenants, besides others, including the Rev. Mr. Cowan, Sir Titus Salt, bart., and Lady Salt.

The Site of the New Law Courts.—In reply to Mr. W. H. Smith, Mr. Ayrton, in the Commons, said, as far as he could judge, the excavations for the foundations of the New Law Courts would be made at such an early period that it would not be practicable to make a thoroughfare for foot passengers from Carey-street to the Strand, for the temporary use of the public.

Incombustible Wood.—In the *Annales du Geni Civil*, Dr. Reineah gives the following directions for rendering wood difficult of combustion and preserving it underground:—The wood, unplanned, is to be placed for twenty-four hours in a liquid composed of one part of concentrated silicate of potassa and three of pure water. After being removed and dried for several days, the wood is again to be soaked in this liquid, and after being again dried, painted over with a mixture of one part of cement and four parts of the above liquid. When the first coat of this paint is dry, the painting is to be repeated twice. This paint mixture should only be made up in small quantities, as it rapidly becomes dry and hard. Wood thus treated becomes unflammable, and does not decay underground.

Opening of the New Synagogue at Rochester.

The new synagogue, erected at the cost of Mr. Simon Magnus, and already spoken of in the *Builder*, has at length been consecrated and opened by the Rev. N. M. Adler, D.D., Ph.D., the Chief Rabbi of the United Jewish Congregations of Great Britain. The architecture is Byzantine, and the materials are Kentish Rag, with freestone dressings. Throughout the synagogue a free use has been made of carvings, the objects delineated being fruit and flowers. The whole of the windows are of stained glass, and the floor is of Minton's tiles. Suspended from the sanctuary is a glass receptacle to contain "the Light of Memorial." The receptacle is a gift from Mr. Defries, in memory of his deceased wife, who was a daughter of Mr. Magnus.

Escape from Fire.—It is said that when a stable is on fire there is only one way of inducing horses to make their escape, and that is by throwing something over their eyes to blindfold them, when they can be led out with the greatest ease, just after they may have resisted every attempt to compel them to go. With many human beings, we dare say, in the excitement and terror of fire it is much the same case. Mr. E. Steane, of Barking, proposes—not exactly to blindfold them, but—to send them down from windows in a case or bag with an apron over the window-opening, the case being drawn to an easy angle below. His apparatus has a rope inside to aid the descent, and grappels above and below wherewith to fix the apparatus.

Drain Ventilation in Bradford.—The Corporation of Bradford are about to make trial of a system of ventilating drains. The manner in which the ventilation is to be effected is by an 18-in. jointed metal pipe, the bottom end of which is inserted in the drain. The pipe is then carried up into the air to a great elevation, either by means of a shaft specially built for the purpose, or by fixing the pipe to the side of some building. It thus acts as a funnel by means of which the noxious gases and vapours generated in the sewer beneath are carried far up into the air and there escape, instead of rising from all the gratings and crevices above the drain.

A Trade Dinner.—The good old style of "mutual interests" with the employed and the employer, was pleasantly illustrated at the annual dinner of the "Hands" of Messrs. Morant, Boyd, & Blanford, of Bond-street, at the Crown Inn, Broxbourne, Herts, on Saturday last. The "Hands" cordially united themselves with the "Hands," and formed a body corporate, developing its energies in foot-races (handicaps) for silver cups, in which all ages took part; and at the very good dinner that followed, expressions of loyalty to the Queen were coupled with those of loyalty to one another's united interests in the continued success of the well-known and long-respected firm.

Metropolitan District Schools.—In the last Report of the Poor Law Board, Mr. E. C. Tuffnell, Inspector of Schools, notices a considerable increase in the number of children at the separate or district schools in the metropolitan district, and attributes it chiefly to the disposition of the guardians to avail themselves more extensively of the disparaging influence of the large London schools. He says it is a very rare circumstance for any children brought up in them to fail to obtain an independent livelihood when launched into the world; indeed, the children trained in these establishments often succeed in disparaging their relations. Not 4 per cent. fail to become independent work-people.

Free Libraries.—The family of the late Mr. William Ewart, M.P., have presented to each of the forty free libraries in the United Kingdom, a portrait of their father bearing the following inscription:—

"WILLIAM EWART,
A Member of the House of Commons for thirty-eight years, between 1828 and 1868. He was one of the foremost promoters of the great political and social reforms of his time, and among many other important measures he originated and carried the Act which gave free libraries to the people of Great Britain and Ireland."

The portraits are delicately finished in monochrome on a photographic basis, and recall agreeably the presence of the deceased gentleman. They are by Mr. John Watkins, of Parliament-street, being replicas of one from life taken by him in 1859.

A Single-rail Tramway.—Mr. W. J. Addis, a civil engineer of Tanna, in the Bombay Presidency, has patented an invention for a single-rail tramway, and cart to work upon it, which, it is said, can be laid down—including four carts capable of carrying 3 tons each—at a cost of about 5,000 rupees per mile. There are already two short tramways in operation, as feeders to the Great Indian Peninsula Railway. Two bullocks are said to be able on this line to draw from four to six times the load that they could do on an ordinary road, and with less labour and at a better pace. The prospectus of a company to make a line 109 miles in length, from Carwar to Hooblee, has been issued at Bombay.

Protection to Inventors.—A short Bill has just been introduced into the House of Commons in the interest of inventors. It is believed that many working men are discouraged from exhibiting their inventions at international exhibitions by their liability to piracy; and to provide for this a Bill has been introduced for the protection of any new invention which may hereafter be exhibited at any international exhibition which may take place this year, or at any international exhibition which the Board of Trade may, upon the application of any persons desirous of holding such exhibition, certify to be, in their judgment, calculated to promote British art or industry, and to prove beneficial to her Majesty's subjects.

Floating Sunken Vessels.—Messrs. Bewley, of Dublin, according to *Saunders's Newsletter*, have recently perfected an invention which may be of advantage to seaport towns and the shipping interest. Balloons are attached by civers to a sunken vessel. These balloons are composed of strong vulcanised india-rubber. At the same time tanks are lowered, in which there are filings of zinc and sulphuric acid; and by liberating a valve the zinc filings fall down into the acid, and the hydrogen produced inflates the balloons, with which, of course, the tanks must be connected, and the vessel rises to the surface. Several large ships, it is said, have already been lifted by this means.

Birmingham Architectural Society.—The council of the Birmingham Architectural Society have invited pupils and assistants, under twenty-five years of age, in the offices of members of the society, to send in sketches and drawings of interesting buildings, and other architectural subjects, for which they will award premiums, viz., five guineas for the best, three guineas for the second best, and two guineas for the third best set of drawings, the merits of which will be determined by the council of the society. The subjects for sketching are portions of Aston Hall, and the Collegiate Church of Wolverhampton; the selection of which portions is left to the judgment of the student.

The Industrial Art Museum at Birmingham.—The movement begun on Monday, to provide a Museum of Industrial Art in Birmingham, under the care of the corporation, is making very satisfactory progress. We (*Birmingham Post*) have already announced two donations of 100l. each, for special purposes, and we have now the pleasure of stating that Messrs. Elkington & Co. have most liberally given 100l. to the general fund. Several other donations have been forwarded to the secretaries, Mr. Mullins and Mr. Smith.

St. Paul's Cathedral.—A correspondent proposes that a part of the decoration of St. Paul's, such as a window or carvings, should take the shape of a memorial to the late Dean Milman, and thinks many would subscribe to that who might not care to subscribe for the building merely.

The Proposed New Promenade, Hull. A liberal offer has been received from Mr. Strickland Constable, the owner of a considerable portion of the land lying between the Anlaby and Hessle roads, and which will be required for the purpose of making the intended promenade between the Hessle-road and Spring-bank, offering to give the land required of him, and 1,500l. in addition, on condition that the Board of Health make the road, and complete a portion of it, within twelve months.

The Trades Movement in France.—Many of the trades in France are now again suffering from the strikes of the workmen: carpenters, ironfounders, and workers in metals generally all over the country are asking for higher wages. The men say that the increased cost of living and lodging compels those demands. There is truth in this assertion; but French workmen have got into a bad habit (their own countrymen say) of wasting two days of the week in idleness.

Buildings in Redruth.—The building trade in Redruth has not been so brisk for years past as it is at present. A large workshop is in course of erection for the Messrs. Clarke & Co., and a shop at the east end for Mr. Anthony Luke. The Messrs. Tronson's shop is now rapidly approaching completion. The tender of Mr. Thomas Jenkin, of Devonport, for enlargement to Mr. Lanyon's house, has been accepted at 895l. The whole of the works are being carried out from the designs and under the superintendence of Mr. James Hicks, of Redruth, architect.

Stoke Newington Green.—The Parks and Open Spaces Committee of the Metropolitan Board of Works have under consideration the improvement of this green. There are many literary and historical associations connected with the place. The house in which the late Samuel Rogers, author of the "Pleasures of Memory," was born is still in existence there. It is in contemplation to erect by subscription a statue of De Foe, who was educated and afterwards resided at Newington-green.

Steam Road Roller.—At the exhibition of machinery, held last week at the large town of Lille, Messrs. Aveling & Porter were awarded the large gold medal for their 15-ton steam road roller.

Dulwich College.—The roofs of the new buildings are covered with patent tiles, supplied and laid by the Broomhall Tile Company, glass tiles being inserted where light is required.

TENDERS.

For alterations to Yorkshire Grey Tavern, Piccadilly, for Mr. Joseph Henderson, Messrs. Bird & Walters, architects. Quantities supplied:—
Williams & Son £579 0 0
Brown & Robinson 553 0 0
McClacklan 552 0 0
Watson Brothers 540 0 0
Sprague 437 0 0
Saunders (accepted) 485 0 0

For rebuilding No. 343, Oxford-street, for Major Gossett, Mr. Jennings, architect. Quantities supplied:—
Fish £1,660 0 0
Woodrough 1,606 0 0
Watson Brothers 1,594 0 0
Fanson 1,576 0 0
Longmire & Burge 1,559 0 0
Harding & Roberts 1,619 0 0
Cook & Green 1,431 0 0

For private improvement works, at Mach Woolton, Lancashire. Messrs. Reade & Goodison, civil engineers. Quantities supplied:—
Morrison £1,849 13 8
Jones & Doyle 1,772 11 0
Sewell 1,534 13 0
Lee 1,497 10 0
Hardacre 1,432 12 3
Standing & Littleler 1,410 9 6
Fawkes & Maude 1,321 13 2
Radcliffe 1,225 9 0
Mitchell 1,221 17 8
Hartley & Parkinson (accepted) 1,129 1 1

For building addition to St. Paul's School, Broke-road, Dalston, for the Rev. W. Stone, M.A. Mr. Wm. Mundy, architect:—
Conder £440 0 0
Eaton & Chapman 447 0 0
King & Sons 435 0 0
Blackmore and Morley 415 0 0
Brown & Sons 390 0 0

For rebuilding premises, Tooley-street, Southwark, for Messrs. Brook & Roberts. Mr. V. J. Grose, architect:—
Keeble £2,758 5 0
Greenwood 2,630 0 0
Little 2,639 0 0
Cooke & Greene 2,478 0 0
Kent 2,367 0 0

For drainage works at Sawbridgeworth, for Messrs. Russ & Minns:—
Killingback £558 0 0
Carter 491 0 0
Morton 460 10 0
Swinford 453 10 0
Wybush 450 0 0
Harris 428 0 0
Cole 426 14 0
Pizze 426 6 3
Jackson 425 0 0
Stevens 450 0 0
Browne 389 0 0
Woodcock 386 0 0
Glasscock 385 0 0
Potter 385 0 0
Young 375 0 0
Bloomfield 372 0 0
Bugbird 369 10 0
Goodair 348 10 0
Prior (accepted) 319 10 0

For the erection of a Corn Exchange and Vegetable Market for the borough of Doncaster. Mr. William Watkins, architect. Quantities supplied by Mr. B. S. Brundell:—

Builder's Work.—Contract A.

Simpson & Malone £16,927 0 0
Henshaw 16,700 0 0
Stephenson & Western 16,720 0 0
Booth, Illingworth, & Sons 16,200 0 0
Powell 15,516 0 0
Whiteley 14,713 12 4
J. & W. Bealand 13,977 0 0
Neill 13,800 0 0
Mathews 13,732 0 0
Dennett 13,686 0 0
Kirk 13,655 0 0
Butler 13,650 0 0
Kirk & Parry 13,540 0 0
Nicholson & Son 13,500 0 0
S. & W. Pattison 13,399 0 0
Bellerby 13,284 0 0
Barry 13,250 0 0
Thornton 12,958 9 8
Pearson & Son 12,810 0 0
T. & C. Anelay 12,578 0 0
Kewick 12,550 0 0
Warburton Bros. 11,653 0 0
T. & H. Askew 11,632 0 0
Waring Brothers 11,562 0 0
Athron (accepted) 11,172 0 0
Weatherley & Rymer 11,005 0 0

Smith and Ironfounder's Work.—Contract B.

Westwood & Bailey £3,260 3 0
Butler & Pitts 2,976 0 0
Harrison 2,834 0 0
Kirk 2,720 0 0
Tildersley 2,696 0 0
Haywood 2,687 0 0
Kirk & Parry 2,674 0 0
S. & W. Pattison 2,670 0 0
Powell 2,633 0 0
Cliff & Co. 2,600 0 0
Pearson & Son 2,590 0 0
Close, Ayre, & Nicholson 2,562 0 0
Henshaw 2,550 0 0
Crosley 2,530 19 0
Newton, Chambers, & Co. 2,500 0 0
Nelson & Son 2,500 0 0
Wooler 2,400 0 0
Whiteley 2,374 0 0
Handyside & Co. 2,346 19 7
Hill & Smith 2,335 0 0
Ratcliffe & Nuscheler 2,288 0 0
Jukes, Coulson, Stokes, & Co. 2,130 0 0
Niell 2,068 0 0
R. & J. Rankin (accepted) 1,950 0 0
Cornell 1,950 0 0

For fitting up a hippodrome, in Argyll-street, Regent-street, for Mr. F. Hellewell. Messrs. Elliott, Cree, & Bernard, architects. Quantities supplied by Mr. Bagg:—

Winterton £2,967 0 0
Richards 2,790 0 0
Conder 2,714 0 0
Sharpton & Cole 2,685 0 0
Reading 2,610 0 0
Lewis 2,590 0 0
Rudkin 2,525 0 0
Garrud 2,439 0 0
Jackson & Shaw 2,410 0 0
Killy 2,376 0 0
Shurmer 2,096 0 0
Blease 1,787 7 0

For shop and house, adjoining Camden-road Station, North London Railway, for Mr. J. R. Bonny. Mr. E. H. Horne, architect:—

Manley & Rogers £1,597 0 0
Mansfield, Price, & Co. 1,560 0 0
Wheeler 1,450 0 0
Hill, Kedell, & Waldram 1,440 0 0
Scrivenor & White 1,396 0 0
Sewell & Sons 1,393 0 0
Wicks, Bangs, & Co. 1,357 0 0

For Child's Hill Chapel. Mr. Wm. Allen Dixon, architect:—

Mann £1,420 0 0
Brown & Robinson 1,236 0 0
Eaton & Chapman 1,234 0 0
Higgs 1,234 0 0
Manley & Rogers 1,226 0 0
Wicks, Bangs, & Co. 1,167 0 0

For the erection of a building at the corner of Swithin's-lane, Cannon-street, E.C., for the Estate Company, Limited. Mr. E. A. Gruning, architect. Quantities supplied by Messrs. W. R. Gritten & Son:—

Ashby & Sons £7,823 0 0
Holland & Hannen 7,867 0 0
Trollope & Sons 7,663 0 0
Hill, Kedell, & Waldram 7,480 0 0
Brass (accepted) 7,453 0 0

For a pair of semi-detached cottages, at Taston, Oxford, for the Hon. Miss Dillon. Mr. J. B. Spencer, architect:—
Honour & Castle (accepted) £407 0 0

For the erection of two pairs of cottages, at Upton, Bexley, Kent. Mr. Horace A. Alexander, architect:—

Wevell.....	£1,100 0 0
Rudkin.....	1,100 0 0
Mason & Bristy.....	1,052 10 0
Pearce.....	958 0 0
Sharp & Son.....	955 0 0
Porter.....	854 0 0
Emery.....	800 0 0
Chappell.....	788 0 0
Green.....	779 0 0
Loneragan.....	760 0 0
H. & J. Butler.....	749 0 0
W. H. & J. Mansbridge.....	692 0 0
Bourne.....	670 0 0
Basham Brothers.....	660 0 0

For the erection of galleries, &c., in Highbury Congregational Church, Notting-hill. Messrs. Satchell & Edwards, architects:—

Cowland.....	£251 5s 0
Higgs.....	749 5 0
Hockly.....	715 0 0

For building a chapel for the Independents, Maesteg, South Wales. Mr. T. Thomas, architect. Quantities supplied by Mr. G. W. Ranwell:—

Leyshon (accepted).....	£278 0 0
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For building extra story and decorations to the house No. 4, Chester-terrace, for Mr. H. Oxenham. Messrs. Mayhew & Knight, architects:—

Vernall.....	£516 0 0
Watson Brothers.....	473 0 0
Barratt.....	430 0 0

For alterations to front of house and stables, No. 16, Devonshire-street, Portland-place, for Sir Kingston James. Mr. W. A. Baker, architect. Quantities supplied by Messrs. Richardson & Waghorn:—

Hopkins.....	£241 0 0
Watson Brothers.....	217 0 0
Simpson & Son.....	214 0 0
Phillips.....	212 0 0
Clark & Mannoch.....	197 0 0

For the erection of a new wing, conservatory, stabling, &c., and alterations to house at Herne-hill, for Mr. John D. Welch. Mr. W. H. Powell, architect. Quantities supplied by Mr. H. J. Harris:—

Downs.....	£2,708 0 0
Colls & Sons.....	2,638 0 0
Mansfield, Price, & Co.....	2,600 0 0
Manley & Rogers.....	2,677 0 0
Jackson & Shaw.....	2,620 0 0
Brass.....	2,488 0 0

For the erection of Dispensary and Relief Office, &c., near the Dalston Junction Railway Station, for the guardians of the parish of Hackney. Mr. Wm. Lee, architect:—

Crabb & Vaughan (accepted).....	£4,781 0 0
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For the erection of the Surrey Drovers' Inn, Croydon. Mr. John Berney, architect:—

Walker.....	£1,645 0 0
Hyde.....	1,620 0 0
Crabb & Vaughan (accepted).....	1,634 0 0
Wright Brothers.....	1,625 0 0
George.....	1,487 0 0

TO CORRESPONDENTS.

W. K. A. (the right notice was not sent before: one of an entirely different kind. If a little pains had been taken, much inconvenience might have been saved, and more information given).—A County Magistrate (we should suggest the use of the tin-lined lead-pipes mentioned in our last, p. 519, ante).—E. S.—W. W.—E. Messrs. S. T. W.—J. J. A.—J. W. G.—C. F. H.—G. L.—P. & Sons.—J. W.—E. C. & B.—G. & Co.—R. A. G.—H. C.—J. McD.—N. H. J. W.—A. & P.—W. M.—P.—J. S.—J. P.—W. H. K.—S. & E.—J. A. R.—T. H.—V. J. G.—H. A. A.—J. W. R.—W. J. G.

We are compelled to decline pointing out books and giving addresses.

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The Builder.

VOL. XXVIII.—No. 1431.

Lands that want Hands.



HE echo within the walls of the Westminster Palace to that loud and portentous voice, which is daily becoming more and more audible throughout the country, on the great question of industrial emigration, has, as yet, been faint and uncertain. No speaker has risen to the true level of the subject—not one has brought before the country anything approaching an exhaustive and well-ordered statement of facts; not one, in fine, has succeeded in dealing with the subject in the tone of an educated and patriotic statesman.

And yet the question is one that presses most forcibly for solution. It is one not to be turned, or evaded, or tided over, or run away from, but to be definitely fathomed and righteously dealt with. It is discussed with a range of opinion that is singularly wide. On the one hand, a claim is urged, in language which despair makes eloquent, by or on behalf of men who are strong in a passionate sense of injustice and of suffering, and to whom the stern logic of hunger supplies an unanswerable argument. On the other hand, it is met, or rather not met, by the feeblest *doctrinaire* maxims, delivered in the most curt and pedantic tone. The claimants are told that it is not to be expected that the money of the community is to be laid out on those who do no service to the community. They are told this by voices which will, in the next breath, vote sums of no small amount for gaols and for poor-houses, and in the midst of an assembly that is rightly about to vote some millions sterling per annum for the primary education of those who are diverted from their wonted bondage of earning a few pence for their parents—and thus for the community—for the expensive process of being taught? Between the two extremes of claiming something and of refusing everything, there must be that *via media* which is usually the safest path of the statesman.

The subject is one of especial interest to our readers. We fear that a large number of those who now seek to leave our shores are left destitute, or nearly so, by the slackening of employment in all trades connected with that of the builder. The chief sufferers, no doubt, are those accustomed to the various branches of naval construction; the closing of the private yards on the Thames (for which we fear that an unwise application of the spirit of combination has to a great extent to answer), being complicated and intensified by an ill-timed winter thinning of the Government artificers, which many do not hesitate to pronounce to be unjust as well as inhuman. Certainly the *prima facie* case for investigation is very strong.

It is impossible to distinguish the tones of reason amid such a din as surges up when the phrase industrial emigration is mentioned, without asking the question,—What is the relation between those who now demand this aid, and the remainder of the community? Does a man cease to be a citizen when he becomes penniless? or does penury give him a claim on those less poor

than himself which he had not before he was a pauper? Is it right—we know it is legal—to compel a man to become a criminal before the law will take cognisance of his wants?

Abstract, theoretic, metaphysical, reasoning on this subject for the most part has the fatal infirmity of want of a basis. But a plain, practical man can glance at our history for the last eight centuries; and must so glance in order to understand the England of to-day. Since the wars of the Roses, and the astute policy of Henry VII. (who did in England much of the work executed in France by Louis XI.), broke the power of the great nobles, and ruined the symmetry of the feudal system, the power which the sovereign once held has gradually been passing into the hands of the people. All over Europe the tendency of change is acting in the same direction. In the process of these changes, more or less violent, or more or less gradual, as they have been in different countries, the relation borne by the citizen to the State has come to be regarded in a varying light. Originally it was held to be a religious duty to honour and obey the king. The phrase was coupled, by a very high authority, with the fear of God. As the ancient functions of royalty became merged, in general opinion, in the duties of the executive magistracy, the idea of conformity to law replaced the earlier idea of obedient royalty. As power sinks or drifts into the hands of a single chamber—first of representatives, then of delegates,—the idea of a moral obedience to law becomes lowered to that of temporary submission to the votes of the majority. And, as the majority will always consist of the less educated, the less moderate, and the persons least endowed with true governing qualities, when revolution has proceeded thus far, it is likely to advance more rapidly. The minority resist,—if successfully, it is reform,—if unsuccessfully, it is rebellion. The politics of the states visited by Aristotle, two thousand years ago, are reproduced under our eyes to-day.

Now, when men are in a state in which innovation on law or on custom, has become a question of counting heads, the relations of the unit to the man are released. Although history knows of no such thing as a "social compact," the loosening of the old bonds of society may proceed till it induces each man to look at his citizenship somewhat under that light. Mutual benefit, in that case, has become the sole bond between the individual and the State. The first gives up, or waives, the exercise of certain natural and instinctive rights, on the condition that the second protects him in their enjoyment. Thus we have made it illegal to carry arms, to bear which once was the birthright of the noble and the free. We have given up the right of private war, because the armed hand of society can protect our property, our lives, and our families, more surely and more to the general advantage than each of us could individually do, if, as was the case previously, the duty devolved on ourselves.

When man finds himself outside of this tacit and equitable social compact, he becomes a member of what are called the dangerous classes. He passes into a state of warfare against society. His hand is against every man's pocket which it can reach, and the armed hand of society,—the policeman,—is against him.

The number of the dangerous classes in England, and in other parts of Europe, although small as compared with that of the social classes, is yet sufficiently large to be menacing. The most anxious care of the most provident statesmen is demanded by the necessity, not only of guarding against the inroads, but of checking the increase, of the members of the dangerous classes.

These may be divided into the actively and the passively dangerous. The first are those who make the profession of crime; who openly live by vice and wrong; the latter are those

who are simply paupers,—consumers of food,—and not exercising even a villainous industry.

There can, we fear, be but little doubt that our present Poor-law system, in seeking to effect economy by making relief dependent on what the recipients consider degradation, systematically increases the number of the dangerous classes. It is much to save the money of the community; it is much to reduce the annual budget of the State, or to lower the rates of a district; but if this economy be effected at the cost of pauperising a larger proportion of the poor, it is a bitter and ruinous parsimony for the country. It is to be feared that this fact is too much lost sight of.

Now, in the actual state of the case in many parts of England, but more especially in the eastern part of London, the great guerilla army of the dangerous classes has been suddenly, or at least rapidly, augmented by a large body of men who are by no means anxious to march under that ominous flag. Workmen, skilled and strong—with their wives and families depending on their exertions—find their work cut from under them. What shall these men do? Will you force the craftsman into the poor-house, and console him with the statement that it is quite according to the laws of political necessity that he should go there? That, in fact, it is an exceptional departure from true principle that there should be any poor-house at all, as the proper thing, when the supply of workmen exceeds the demand for workmen, is for the surplus workmen to starve; because, by that process, the equilibrium is most rapidly and most surely restored.

Now, if we once depart from this grand principle (which, disguise it as we like, is in point of fact the consistent doctrine and logical outcome of a certain school), if we once admit that motives of humanity to others, or, it may be, of fear for ourselves, can break down the stern law of "starvation to the idle," however they become idle, it evidently becomes a matter, we will not say of policy, but of common sense, to apply such relief as we do afford in the most effective way. In-door and out-door relief, partial aid or total support,—put it as we will,—all must come under that master principle. We have resolved not so sternly to refuse to be our brother's keeper as to let him starve under our eyes, while we have enough and to spare. It would be the part of fools to hesitate as to the propriety of making what we do give go as far as it can be made to go.

This, then, is the logical nature of the position taken up by those who are now calling for State aid to industrial emigration. They can point out that any permanent increase to the entirely non-productive classes is a grave peril to the State. They may assert that the nation neither can nor will allow the simple remedy of the politico-economical purist—actual starvation—to take effect. They say that it is a question of how best to apply the aid that we feel ourselves forced to render, in one form or in another. And they conclude that this aid can be most cheaply, and most advantageously, rendered, by assisting in industrial emigration.

If we have carried our readers thus far along with our statement, they will see that the point at which we have arrived is this,—how far is emigration the best remedy for a disastrous state of things, as to the main facts of which there is no question? But, even supposing this question, which is not a simple one, to be decided in the affirmative, the further question as to the form in which such aid should be supplied by society still remains open to discussion.

On the first blush of the matter, the simple statement that on the one hand we see industrious men driven to the verge of starvation for want of work, and on the other hand we see broad tracts of country desert for lack of men to

till the ground, leads to the conclusion that to apply the arms of the men to the acres of the waste is a self-evident duty. But yet we have much to clear up before the course is free from difficulty.

We have to regard three parts of any scheme of emigration. We have to consider its effect on the emigrants themselves, on the country to which they are sent, and on the country from which they are transported.

With regard to the third of these points, which mainly affects each of us who stay behind, we must remember that a full-grown man, capable of exercising any craft, or even of felling the forest, or ploughing the ground, is an expensive and a valuable product. So much is this the case that, when the price of labour was in the market in a more tangible form than is now the case,—when a man could be sold like a horse in certain parts of the world, a considerable money value was attached to the purchase. It is true that coloured labour, as it was called, was chiefly in demand for climates in which white labour fails, but this does not alter the principle. We should be far from overrating the English labourer, if we consider that his production, at the age of manhood, has cost the country from 150*l.* to 250*l.*; and that his power of production is, at a minimum equal to an earning of from 30*l.* to 50*l.* per annum. That is the article we are about to get rid of, because we do not know what to do with it.

Now, if it be undeniable that we have no home use, present or proximate, for this valuable article, it may be held to be evident that it is good policy to remove it to a locality where it may acquire its natural value. By so doing we shall serve, if not directly our own pecuniary interest, at all events the interests of mankind. Nor have men ever been blind to the fact that colonists, well planted and well directed, may become most valuable aids to the mother country.

Thus comes the consideration that, by finding the means of exportation, we can effect a positive financial saving. The cost of permanently getting rid of our *embarras des richesses* will be that of four, five, or six years' maintenance. But in the one case the money is paid at once, and the expenditure is at an end; in the other it is paid by instalments, but the instalments are interminable. From the ratepayers' point of view, therefore, emigration means economy.

From what we may call the police standpoint, the aspect of the affair is similar. The more we reduce the dangerous and non-productive classes, the less difficulty shall we encounter in dealing with the residue. If we allow their increase to a certain point, the result may become an evil hard to manage. To allow the increase of this menacing army by a body of able recruits, burning with a sense of injustice received from society at large, would be a positive danger to the rest of the community, whether that sense of injustice were well or ill founded.

Thus for those who go, and for those who stay, the plan of emigration has its advantages. There remains what has been called the Colonial question. And this is intimately connected with a matter which requires careful attention. It is that of the organisation of emigration.

Emigration, as we are accustomed to regard it, means the engagement, by certain agents, of a certain amount of shipping accommodation,—the collecting on board these vessels of as many passengers, of all sorts, as can pay their passage money or have it paid for them, and the disgorging of this living freight at some selected port abroad.

Now, so long as we conduct emigration in this way it is quite natural that our own colonies, or any other State, should strenuously object to receiving what has been termed our moral sewage. To pour an unassorted stream of emigrants into the turbulent water of a rising settlement, is simply to endeavour to shift our own burden upon their shoulders. The selected place of debarkation would have full justification for resisting such an infliction by all the means in its power.

Another interest is lost sight of in this rude and summary process. It is that of the emigrants themselves. Such a mode of assisting emigration means merely getting rid of our paupers. It is a euphuism for transportation for life as the penalty of poverty. Turned adrift in another hemisphere, the poor and unprovided emigrant is no less helpless than he was at home. Earth does not yield her fruit untill. Harvests require seed-time, and growth-time;—and

how shall the artisan, sent for the first time from the bosom of artificial city life to behold the face of nature in her wildness, find food and shelter while he is learning how to procure both by his own honest and patient toil?

The objections, then, of our colonies, or of other countries, are not only just, but they are exactly accordant with the wants of the emigrants themselves. The interest of both point in the same direction. To transport the population wholesale may—we do not say would—be a benefit to those who are left behind. It could only be an evil to those who are sent out, as well as to those amongst whom they are sent to dwell.

These difficulties disappear before the scheme of an organised emigration. It is too much our habit to trust to the chances of the moment, or to the energy of our exertions, and to lose sight of the advantages to be commanded by patient forethought. This unreadiness is a special peculiarity of the English character. Those of us who have had the experience of the command of large bodies of workmen of different nations, are aware of the helplessness usually evinced by an Englishman under circumstances in which a Frenchman will make himself rapidly at home. Put him in the groove, and the English workman will hold his own, and will distance most of his competitors,—but he is slow to make a new groove for himself.

To do this, however, is necessary for the success of emigration. At the present time the main requisites of a new colony can be plainly and precisely foreseen. The site should be not only purchased, but mapped, and the lot of each settler appropriated, as a preliminary step. Trades and occupations should be proportioned; those who are to exercise them being selected according to proper considerations. Not only should the *cadre* of the colony be thus properly framed, but a deed of settlement should be drawn up, and signed by each emigrant; and the functions of the magistracy and the police should be as carefully provided for as those of the doctor or the schoolmaster. Organised in this manner, a colony, from the time of the arrival of the emigrants at their location, would be a "going concern." As it is intended to be self-supporting, the commissariat must be properly organised, and the supply of bread-stuffs made adequate to the time that would elapse before the first harvest would be secured. Sheep, goats, kine, horses, fowls, pigs, if not taken with the emigrants, should be purchased and forwarded so as to be available on the arrival of the inhabitants at their new homes. Thus the work of inclosure, of building, and of tillage, might commence with order and with spirit on the morrow of the arrival; and instead of a helpless mass of bewildered fugitives, we should see an organised body of men fit to be the founders of a new state or city. The mother hive, in throwing off its swarms, must see that each is grouped round its selected queen-bee. Without this, as we all know, no honey is collected, and no comb will be formed.

In the organisation of a colony of this kind, private effort must take the lead. Every colonist must bring to the common stock a certain fixed proportion. Here is an admirable field for private charity. The smith, the carpenter, the bricklayer, who agrees to form part of the industrial body, and to whom lots *a*, *b*, and *c* are allotted, must each pay a fixed amount on execution of the deed which makes them proprietors. This much, as a pledge of respectability and of earnestness, the managers of the enterprise will have the right to expect. Among a people who spend so many hundreds of thousands in annual charity, this starting-point will not be looked for in vain. This attained, a basis will be formed on which to ask for aid from the local rates, on the ground of the permanent reduction that will be effected in their amount; and then, and hardly till then, will there be such a claim established on the central administration for further support and aid, especially as to matters readily within its competence (such as freight, communication, gift or purchase of land, scientific information, school-books, and requisites, and the like), as it will prove unwise as well as ungracious to refuse.

That a well-ordered scheme, or series of schemes, of this nature would fail we do not believe. That public opinion would demand that the aid of the community (whether by local or by imperial aid, or by both combined), should be given to the formation of infant colonies on this basis, we think a mere question of time. That waste labour thus applied to waste lands

would fructify into a golden harvest we have no room to doubt.

There remains the question of the locality. Leaving aside for a moment the consideration of those wide geographical ranges amid which we have to choose—the Australian continent and islands; Southern Africa; Hilleide India; Canada, that is asking for emigrants,—there is yet another suggestion to make. In the United Kingdom only 46,000,000 acres out of the entire area of 77,000,000 acres are at this moment under cultivation. Why not save the expense of flight, and start a normal home colony or two? We have asked the question before. Why not make the experiment of an organised settlement on a few square miles out of those 89,000 acres of the new forest, of which we have heard so much lately? There is no untried climate to dread, no savage beast to fear, while the soil is principally sandy. We have the very finest opportunity for the application of sewage; and fertilisation would keep pace with increase of population. Without prejudice to other efforts, we might readily and rapidly establish one or two normal home colonies. Charity, too, might in this case be tempted by the offer of security—that is to say, the advances asked from private sources would take the form of philanthropic loan (with a good prospect of return), rather than of charitable gift. Who will be the first to start a home colony on the *Builder's* plan, and to show that it is not in poisoning our rivers by the rich nitrates contained in our sewage, that we show our most lamentable blindness, and our most irretrievable waste of the sources of national wealth? Were the matter taken in hand at once, Victoria colony, or Alexandra colony, on the Hampshire forest land, might garner good harvests, and develop a remunerative industry by the autumn of 1871.

PROVINCIAL IMPRESSIONS OF TOWN STRUCTURES.

BURNS has hinted, in his well-known verses on an unmentionable subject, how desirable it may be on occasions "to see ourselves as others see us." Perhaps this principle, backed by the recommendation of the Scottish bard, may be accepted as an excuse for intruding upon metropolitan readers some few reflections which suggest themselves to a provincial architectural mind, after surveying rapidly what has been done, and is doing, in the modern Babylon—"going round about, and telling the towers thereof."

With regard to one great piece of work, not long since brought to its conclusion, the Holborn Valley improvements, it may be said that there is little room for anything but praise, so far at least as the Holborn line of route is concerned, unless we add something like astonishment that so great a piece of work, involving such breaking up and temporary derangement of valuable property, should have been attempted, and satisfactorily got through at all. The work, in connexion with the railway, is indeed not very satisfactory, architecturally; and the bridge crossing the bottom of Ludgate-hill, though, perhaps, one of the best-abused structures of the day, has certainly received no more abuse than its exceeding and superabundant ugliness entitles it to. But in the bridge which carries the raised and resuscitated "Holborn," no longer "Holborn-hill,"—across Farringdon-street, the engineer, if guilty of leaving room and verge enough for some slight practical failure, has done much to redeem the credit of his profession with regard to the artistic appearance of the work, and the Farringdon-street Bridge, from below, at all events, is a structure which the architectural eye may rest upon with pleasure. As to the bronze statues, and the lions or griffins playing at ball on the parapet, one may pass over these as harmless and playful excrescences, which amuse one for the moment. But the bridge, with its cluster of granite piers of a very effective plan, and the noble roadway above, constitutes an achievement of which London may be proud,— "a fine play, and very notably discharged." Coming into the "City" *par excellence*, one of the chief wonders of a country architect is where all the Gothic buildings have got to. We see continually prints of "new warehouses in the City," and other such structures, designed in startling chamferesque Gothic of the most approved type, but none of these appear to the casual stroller through the regions of Cornhill and Leadenhall-street. Are they all in back

alleys, known only to the initiated? At all events, Classic, "or something like it," still reigns supreme in the chief and most historical thoroughfares of the City. Here, as in some provincial towns, the increasing tendency to expend a portion of capital in architectural effect (to the street, at all events,—they may "build the back part shabby") is evinced, in the remarkable contrast between the showy expensive appearance of some of the newer buildings, and the meagre impotence of the average linings of the streets, brick screens with holes in them glazed nearly up to the front, leaving scarcely an apology for a "reveal." Among these are here and there to be seen some of those specimens of projecting upper stories, remnants of an attempt at the picturesque, or a desire to make the most of the ground, which Metropolitan Building Acts ruthlessly discontinue. Banks appear to be the order of the day among the newer and most showy structures; let us hope these stand as outward and visible signs of actual wealth and prosperity, and not as mere counters to catch the eye. While mentioning this class of structure, it is difficult for a stranger to avoid a word of recognition for the general truthfulness of design displayed in the aspect of the "old lady in Threadneedle-street." We have arrived at some better perceptions, since Sir John Soane's time, as to the style of detail suited to a northern climate and to London smoke; but have we made any advance upon this building as to truthfulness and suitability of expression? Say what we will about its heaviness and squatness of appearance, the fact remains that the "Bank of England" is emphatically in its whole design a bank, pure and simple,—that and nothing else; and quite as successful in expression as "Newgate" has elsewhere been said to be. Nor will we speak otherwise than respectfully of the Exchange, the inscription over which, "The earth is the Lord's and the fulness thereof," so much scandalised a republican Frenchman, who, reading plural for singular, exclaimed, "How these English do flatter the aristocracy!" Among the new banks we can scarcely hesitate to single out for praise the "National and Provincial," in Bishopsgate-street, not long since engraved in the *Builder*. Novelty of treatment, without any touch of the grotesque or sensational, a happy and successful introduction of bas-relief of a somewhat higher class than architectural sculpture in general can claim to be, and a piquant and effective treatment of ornamental detail, with deep shadow and sparkling points of light,—all combine to characterise this as a more than usually successful design. The manner in which the rustication of the plinth below each column is effected, so as to give something for the eye on a near approach, while securing the general effect of rustication at a distance, is commendable. Farther up Bishopsgate-street, Crosby-chambers and Palmerston-chambers, side by side, are not bad specimens respectively of commonplace Gothic and Classic (or Italian) as applied to offices: anything more thoroughly uninteresting than the latter (which is, unfortunately, a very typical building of its class) could not well be imagined: rather than this let us have the comparatively ill-lighted Gothic building; but a compromise between the two is certainly possible. We may walk some way up Bishopsgate-street without seeing anything else to attract even an unaccustomed eye, unless it be the tower of St. Botolph's, not certainly one of the happiest of Wren's inspirations, the strange flabby floral decorations on which raise some speculation as to what, in the talked-of "restoration" of Wren's City churches, would possibly become of these excrescences under the hands of the modern restorer. Excision, it is to be feared, amputation, "without benefit of clergy," would be the only cure; at any rate, the sight of these stone roses frightens us back to the corner of Leadenhall-street, where, looking to the left, the long block of offices under one design, but with no visible distinguishing title, suggests some considerations as to "sky-line." Indeed, we are not here going into the discussion of the great question of gable versus cornice,—much may be said on both sides as to that, though, as a matter of practical convenience, we may surmise that the cornice would carry the day; but it should be observed that the effect of a long horizontal cornice, unquestionably fine in itself, is marred, if not nullified, when the building, cornice and all, follows a slight and irregular bend of the street. A horizontal cornice, to produce its effect, must be a straight line, not only "in altitude," but "in azimuth," or must follow

some distinct and recognisable mathematical curve, or a crippled unsatisfactory appearance in the skyline is the result; most of all when, as we noticed elsewhere, one portion of the front of a building is straight, and the rest curved on plan, and the same cornice is carried along the whole without the slightest break to mark the transition from straight line to curve. The display of polished granite in the front of the "Scottish Widows' Fund" building in Cornhill is something overpowering, and one scarcely knows whether to congratulate the "Scottish Widows" on having so much money to expend in granite, or to condole with them on this reckless waste of their capital; or is all this granite a present from some Peterhead firm, on the principle of "ea' me and ea' thee?" This sort of thing is at best a very vulgar source, if it can be called a source at all, of architectural effect. Another vulgarity which we may notice in new buildings up and down the City is the reckless employment of very ornate and exuberant foliated ornament, as, for instance, in the "British North American Bank," which is a flagrant specimen; here and elsewhere the deep hollows and under-cutting only serve as a receptacle for soot and dirt, which will soon choke them, besides that the foliage is in itself very deficient in refinement and artistic character. There is far too much of festoons and garlands and such things about. In the hotel which forms the front of the Cannon-street Station, Mr. E. Barry has hit something like the right mean between over-flatness and over-projection in ornamental detail, and the whole building in point of design is an improvement upon his Charing-cross Hotel, exhibiting more refinement and less of show and glitter. Opposite the Cannon-street Station, some "eligible offices to let," apparently quite new, show a style of decoration which may be a little too flat and deserve to be called tame, but which is at all events better suited to a London atmosphere than nine-tenths of the decorative ornament which one encounters during a walk through the City. Let those architects who are to have the task of giving architectural expression to the new "Queen Victoria-street" (a name which will certainly clash with "Victoria-street") consider well this point of ornamental detail, and endeavour to provide such ornament as will retain its effect when old and have something of refinement about it, whether new or old; they have a virgin field before them, a new street to be entirely lined on both sides, and here is an opportunity for enterprising and original men to strike out some new suggestions in ornament and design, especially if the buildings here are to be shops. In this latter case let them endeavour to persuade their clients to permit something like a solid foundation for the design in the shape of stone piers, a matter in which Messrs. Negretti & Zambra, in their new premises at the Farringdon-street crossing, have suggested a move in the right direction, though not so decisively as could be wished.

The opening of the new branch of the Metropolitan Railway along the Thames from the City to Kensington must be a source of gratification and convenience to dwellers on the banks of the now comparatively purified Father Thames. But the aspect of the new Blackfriars Bridge, or of the Embankment, is not at all a source of unmixed gratification to the architectural visitor. The bridge is a fine piece of work, no doubt, apparently very well carried out constructively, but is one of the oddest exhibitions of engineering aspirations in design that could well be seen. The immense heavy granite columns with their big capitals (a sort of crib from the "stumpy-column" Gothic of the day), which adjoin each pier of the bridge, have a kind of imposing appearance at first sight; but all this changes to wonder at the waste of material and misapplication of design involved when it is discovered, after a moment's inspection, that these massive columns have absolutely nothing to do, terminating simply in a small projecting balcony at each side of the bridge, with a seat in it. If it is supposed that those heavy masses of material add to the stability of the bridge piers, then they should have been treated as buttresses, and not as columns; as it is they are worse than useless, for their design and proportion conveying no idea of their real size, they completely destroy the scale of the work. The columns, with their balconies over, we heard compared to a series of "fonts" applied to the sides of the bridge; and the whole feature has, in fact, just the proportion and appearance of the kind of design most

in vogue for church-fonts now-a-days. Then the iron balustrade of the bridge is another falsity, of a design totally unfitted for cast iron, and looking like a bad attempt to imitate wood-work. Nor is a walk down the Embankment more satisfactory to the æsthetic sense of the visitor. That this is practically one of the most successful works of modern engineering no one, probably, will be disposed to question; its very success in this respect, and the magnitude of the work and expenditure involved, increase our regrets that more has not been made of so grand an opportunity artistically. The commonplace and meagre balustrade, the square blocks of bare masonry intercepting the line of the embankment here and there, and the ugly plinth stones at intervals surmounted by a rusty iron dowell prepared for the reception of we know not what possible failures in modern sculptural design, are enough to give one a melancholy feeling in walking this now far-famed promenade, a conviction that no opportunities for achieving architectural grandeur will ever occur in this country without being eventually thrown away or misused. Opposite the Westminster Palace, the new hospital, on the pavilion system, rises in a series of square blocks of building not unpicturesque in design, or, at least, in general effect, and forming, with their reflection in the river below and their numerous little erections (for ventilation?) on the roofs, a very pretty *tout ensemble*. How the details might stand a closer inspection deponent is unable to say. No one, in walking along the embankment from Waterloo-bridge towards Westminster, should omit to turn round and take note of the fine effect of architectural composition formed by the curved line of the embankment crossed by the bridge, and crowned, over the bridge, by the long perspective of Somerset House front; and those who travel by the new branch of the Metropolitan Railway will find it worth while to visit Blackfriars Station, and obtain a new view of St. Paul's dome and western cupolas, which, as seen from the railway platform, here rise into the air, almost undisturbed by the sight of any inferior structure, with a peculiar magnificence of aspect. What a strange contrast between this and the Westminster Clock-tower, with its gilding glittering in the sun; the old and the new "revivals!" Which will longest retain its hold on men's minds? Far be it from the writer to alight the Westminster Palace; the Victoria Tower is a notable monument for any architect to have left behind him; but will future generations gaze at this erection with the same feeling of entire satisfaction, the same uplifting of mind, which the sight of that noble composition of dome and cupolas never fails to stir in most of us, especially on revisiting it after a long absence? Of course, we speak now of the general design of St. Paul's, passing over mannerisms of detail. Perhaps we had better leave (in Sir Hugh Evans's phrase) "our ancestors that come after us" to settle the point. But one thing that always strikes us on revisiting the Westminster Palace is the want of breadth of wall surface; the whole is so much broken up into detail as sometimes to suggest to a profane mind the idea of an *ecorché*—something from which the smooth outer surface has been removed. The new external corridor or cloister added, under the direction of the present architect, is a good solid piece of work, not without some humour, too, in the carved decoration in the archivolt of the entrance archway; and a pleasant feature adjoining the Palace is the laying out of the open space at the bottom of Parliament-street, into grass-plots and flower-beds, which are protected, let us notice, by an iron railing of good design, in perfect keeping with the material. Might not other such spaces, here and there about London, be made available in the same way for flower-beds; a slight relief to eye and mind, amidst miles of brick and pavement?

One impression which a provincial architect is apt to feel, after taking note of what is going on in the metropolis, is that, though there are splendid opportunities open just now, there is a want of artistic or architectural purpose in making use of them. The engineers have got too much use of them. The engineers have got too much use of them, for one thing; their structures are the largest and most expensive of all, but will not hand down our name to posterity as an artistic generation. The architects seem too much divided in their aims,—too fully bent to do each what seems good in his own eyes, to enter upon any broad scheme of improving city aspects in rebuilding the altered thoroughfares. Otherwise

we should say, in carrying out this, strive rather for a general architectural effect than for showy elevations here and there, alternating with mere builders' work. Shall we ever have an artistic "Minister of Public Works" to act as a directing mind over the whole? As it is, it cannot be said that London, with all its vast opportunities, is doing very much to redeem us from the discredit of being probably the most unesthetic of civilised nations.

SANITARY DISTRICTS.

THE frequent announcements of late that "a meeting of the Royal Sanitary Commission was held yesterday. Present—Right Hon. Sir C. B. Adderley, M.P., in the chair," with numerous other members of the Commission,* show that they are in great activity, and that we may expect a report from them soon. The report they have already issued, the first, contains no expression of their opinion or recommendation, but gives the evidence taken before them up to the date of issue. Whenever the Commission may feel themselves to be in a position to offer their opinion on the whole question, or on any part of it,—as, for instance, on the best way of dividing the country into sanitary districts,—the public will be much interested in whatever the Commission may report; and it may be useful, therefore, to see in anticipation upon what evidence their future report will be based, so as to be able to discuss it immediately, for the case is urgent.

One of the chief questions raised at the outset of the inquiry is how to divide the country into districts for sanitary purposes, so as to interfere as little as possible with existing arrangements and customs, and at the same time to make effective the legislation that will be hereafter founded on the inquiry now being made by the Commission.

The division of the country into counties, parishes, union districts, boroughs, cities, and towns, has been made from time to time with no uniformity of boundaries and on no general plan. The Commission, therefore, meet with this difficulty at the outset, and have to choose from amongst divisions whose boundaries are not coincident; they are,—

1. *Counties*, the boundaries of which are generally natural boundaries, such as the ridges of hills that shed the water in opposite directions, rivers, or other obvious landmarks.

2. *Parishes*, whose boundaries along the county margin are not everywhere coincident with the county boundary, but extend sometimes over the county boundary, and include a portion of the adjoining county. Parish boundaries have in many cases no obvious landmarks, such as water-courses or highways, but are so undefined as to require that the bounds should be traversed periodically by the parochial authorities in order that they may be maintained traditionally.

3. *Unions*, which are aggregates of parishes.

4. *Corporate towns*, the boundaries of which have been fixed by Act of Parliament, and which are not, in many cases, coincident with the parish boundaries. Sometimes the parish is larger than the municipal district within it; and sometimes the town, before it was incorporated, embraced several parishes, and when incorporated was made to include certain parishes in their entirety. The boundaries of other municipal districts, again, have been extended from their original positions so as to include portions of the same town that had grown around the old municipal district.

5. *Towns not incorporated*, whose boundaries have been established for sanitary purposes by special Act of Parliament, and placed under the authority of boards of improvement commissioners; and other towns whose boundaries have been established for sanitary purposes under one of the recent general Acts and placed under the authority of local boards. In most of these cases the boundary does not coincide with the parish or any other pre-existing boundary.

* The other members of the commission originally appointed were the Earl of Romney; the Earl of Ducie; the Right Hon. Lord Robert Montagu, M.P.; the Right Hon. Stephen Cave, M.P.; Sir Thomas Watson, bart., M.D., F.R.S.; Lieut.-Colonel Ewart, R.E.; Mr. John Robinson M'Clellan, C.E., M.P.; Mr. John Tomlinson Hibbert, M.P.; Mr. Evan Matthew Richards, M.P.; Mr. George Clive; Mr. Francis Sharp Powell; Mr. Benjamin Shaw; Mr. James Paget, F.R.S.; Mr. Henry Wentworth Acland, M.D., F.R.S.; Mr. John Lambert; Mr. Francis Thomas Bircham; Mr. Samuel Whitbread, M.P.; Professor Christison, M.D., Pres. R.S.E.; Mr. William Stokes, M.D., F.R.S.; and the Right Hon. Russell Gurney, M.P., Q.C., with Mr. W. H. Birley, the secretary.

The boundaries of other divisions, for Parliamentary or ecclesiastical purposes, hundreds and dioceses, hardly affect the question of the sanitary division of the country; and it is from the three first-named divisions that the choice must be made, having regard to the existing interests of the fourth and the fifth.

Of the many witnesses examined by the commission, Mr. Simon, the medical officer of the Privy Council, and Dr. Rumsey, one of the members of the General Medical Council, are able, from their official positions, to form opinions on our present subject which deserve attention.

Mr. Simon recommends that the union districts formed under the Poor Law for destitution and registration purposes should be made the initial districts for sanitary purposes, presided over by the boards of guardians, who should be the authorities for all sanitary purposes, where special sanitary districts are not already formed within such unions. The guardians should not act *ex officio* as the sanitary authority, but be appointed for the double purpose of administering the Poor Law and superintending the laws of health. We strongly insist on this latter provision.

There should be no intermediate authority, Mr. Simon says, between the guardians as the local authority and the Minister of Health in London as the central authority. The Minister of Health may be, as it may be hereafter determined, either the Home Secretary or the Privy Council.

The Minister would appoint a chief of the department of health, who would have the assistance of inspectors, four, six, or eight in number, as may be found necessary, but Mr. Simon thinks the latter number would not be exceeded.

The local authority would appoint a resident medical officer—the present medical officers of the unions in places where a special sanitary district is not formed, or where, if formed, the local authority does not appoint a properly qualified medical officer of health. These resident medical officers of health and registration would collect from the registrars of the unions the statistics of mortality and disease, and remit them, properly classified and tabulated, to the central office, where they would be arranged, analysed quarterly, and the state of health of every community ascertained, and where epidemic disease appeared to exist one of the inspectors would be directed to proceed to the place and make an inquiry into the cause and report to the head office. He would, while making his inquiry, offer advice founded on his more extensive knowledge and experience, to the local authority and officers. The inspector would exercise his judgment on the case whether the cause was only of a temporary nature, such as the existence of a distinct nuisance, which might be removed, and which he would at once advise to be done, or he might report that the case required a more fundamental remedy, such as an engineer only could advise upon; whereupon the Minister of Health would direct an engineer to make an investigation of the nature of the case and advise the local authority what, in his opinion, would remedy the evil, which if done would stay further proceedings, but if not done within a certain fixed time would be formally represented in that respect to the Minister, who would then issue a final order that the work be done.

Mr. Simon would take the existing Nuisance Law and extend it to include the pollution of rivers, and the obstruction of rivers. In the Sanitary Act, 1866, certain exposures of persons with contagious diseases are prohibited, and cases like those should be brought within the meaning of the word nuisance, and so with many other things that are now dealt with by separate action and under various Acts of Parliament, they might be brought under the one head of Nuisance, and dealt with accordingly.

Dr. Rumsey says the main causes of sanitary mismanagement in country districts may all be referred to a few primary and fundamental deficiencies in organisation. First, the want of systematic inquiry and constant sanitary inspection, aided by complete statistical returns of sickness and mortality, and their causes, in every district. Secondly, the want of highly-qualified resident officers, in proper position, by whom sanitary inquiries and inspections should be made and recorded, and statistical returns verified and collected for local use. Thirdly, the want of a single order of competent local authorities, fortified by scientific advisers, and made respon-

sible for carrying into effect all necessary sanitary measures in districts of sufficient and suitable extent. Fourthly, the want of some clear and adequate definition of the qualifications, duties, powers, and relations of both local authorities and officers. With regard to the first-named deficiency, Dr. Rumsey submits that a national system of sanitary inquiry ought to be universal as regards localities, continuous and regular as to times, and comprehensive as to subjects. Its results ought also to be readily applicable to sanitary administration. There are at present no arrangements for sanitary inquiry in this country which are at the same time universal, continuous, and comprehensive. As to local reporters, few and scattered as they are, there is no security for their competency or their due independence.

Local registration of returns of vital statistics, full and complete, are indispensable. They are the very foundations of sanitary science and practice. The registrations now made by the medical officers of the union districts are incomplete, uncertain, and are not brought home to the authority and people of each district in a serviceable form.

Local sanitary legislation based upon these becomes open to question, if not inefficient in operation. In all but a very few populous districts, where there happens to be a superior officer of health or some active sanitary volunteer, there are no skilled persons empowered to examine, analyse, explain, and edit the returns, nor are the local authorities able generally to act upon the information rendered.

Dr. Rumsey thinks the vital statistics now registered by the registrars of the Poor-law Unions might be collected by Boards of Health or corporations, or whatever the local authority may be, and utilised; but this is rarely done, and, after all, these returns form only a part of the information required. However, the registrations cannot be analysed, still less can they be revised and corrected for local use, in the absence of officers empowered to collect and revise them. The labour of extracting the particulars relating to any group of population, not being a registration district, is immense. It is no one's duty to make the abstract, and no one can be expected to undertake it as an amateur. A special officer is therefore required to bring this information into a correct form to bear upon local administration. There is much more required to be ascertained than the general rate of mortality in towns or districts.

On the question of how registration districts should be formed—that is, with what boundaries, whether the parish should form the unit, and so aggregate a number of parishes to form the district, or whether district boundaries should coincide with county boundaries—Dr. Rumsey shows that 550 parishes in England extend into counties or hundreds. In forty-six unions, sixty parishes extend into two counties; that is to say, the old county boundaries divide this number of parishes, so that the result is, that the unions being formed without respect to the county boundaries, no fewer than 180 of the 620 unions extend into more than one county. Now, if the old historical counties, under county law and government, are to be taken as the basis of areas for sanitary administration, these unions or registration districts would have to be again divided for sanitary purposes, and on the whole Dr. Rumsey recommends that course. Wherever a registration district is divided by a county boundary, the vital and sanitary statistics of the two portions should be returned separate, and carried each to its own proper county.

GLASS-MAKING IN THE MIDLANDS.

THE manufacture of plate, crown, and sheet glass, in the Midland Counties, has for its principal centres the towns of Birmingham and Stourbridge. The leading producers are the Birmingham Plate-Glass Company, Messrs. Chance, Brothers, & Co., of Spon-lane Works; and the Stourbridge Glass Company (Limited), of Stourbridge.

According to Mr. Swinburne, the art of casting plate-glass, by throwing the molten material on an iron or copper table, and rolling it into a plate of equal thickness, was first adopted in this country, in the year 1771, by a Lancashire firm; but plate-glass of smaller dimensions was made at South Shields, at a still earlier period, and was technically known as "blown-plate."

As recently as 1836, the production of plate glass in the United Kingdom did not exceed

7,000 ft. per week. On the abolition of the glass duty, in 1845, however, the consumption enormously increased, and the weekly supply may now be estimated at 140,000 ft. This is exclusive of the large quantity of glass imported into this country from France and Belgium.

The earliest kind of sheet-glass manufactured in England was known as "German-spread," and was of coarse material and rude finish. To this succeeded the Bohemian, introduced and successfully perfected, after much difficulty, by Mr. R. L. Chance and Mr. James Hartley, about the year 1838. The art of blowing being at that time new to England, foreign workpeople were in the first instance employed, but English artisans soon became initiated into the process. The size usually blown at first was 36 in. by 20 in., but now cylinders are blown occasionally as long as 77 in., and from 45 in. to 50 in. regularly. The improved process of grinding and polishing this description of glass was the invention of Mr. Chance, and the term "patent plate," was given to denote the glass to which this new and beautiful finish was imparted. The present manager of the Birmingham Plate-Glass Company is the inventor of several useful minor improvements in the casting of plate-glass.

The three establishments named employ 2,500 workpeople, and produce 17,000 tons per annum. In addition to these plate-glass works, there are in the neighbourhood of Stourbridge, Woodale, and Ambicote ten works for the manufacture of flint glass, and two for the manufacture of bottle glass. These industries are two centuries old, and were first established by a company of Hungarian refugees, who settled themselves on a hill just outside Stourbridge, since known as "Hungary Hill." The abundance of fire-clay in the neighbourhood, of a quality peculiarly adapted for glass-house pots, was doubtless the reason of Stourbridge being selected as the seat of this primitive manufacture.

The most interesting branch of glass-manufacture is undoubtedly that connected with lighthouse illumination, and our sketch would be incomplete without some notice of the dioptric apparatus manufactured by Messrs. Chance, who are the only representatives of this industry in the kingdom. The French rightly claim the invention of the dioptric lights, and for many years they enjoyed the exclusive manufacture. Soleil, Letourneau, Sautter, and Lepante are names of honour in this important enterprise, and their labours were appropriately recognised and encouraged by the French Government. In England the State held out no prospect of its fostering care to those who might choose to embark in the manufacture. Messrs. Cookson tried, but without success, and relinquished the effort with great pecuniary loss. Then came Messrs. Chance; and, as Mr. Kenward well observes, totally unsupported by Government, and unaided by Lighthouse Boards, they worked out, *ab initio*, the most important problems and processes, and centralized in their own establishment the fabrication of every part of the apparatus. The latter, as at present constructed, consists of six orders or classes of lights, each consisting of a hollow cylinder built of lenses and prisms, varying in diameter from 6 ft. to 1 ft., and in height from 10 ft. to 2 ft. Each is susceptible of three chief modifications, viz., a fixed light, a revolving light, and a light which is partly fixed and partly revolving. Arrangements of flashes and eclipses, of constant and intermittent light, are made to suit each case, with regard to distinctiveness or to power. In the middle of the apparatus is placed a single lamp, having one or more concentric wicks. The burner of the lamp is so placed as to allow the most advantageous optical action on the flame, determined by the required functions of the light, and by its elevation above the sea. A fixed light of the first "order" consists of a central belt of refractors forming a hollow cylinder, 6 ft. in diameter and 30 in. high; below it are six triangular rings of glass ranged in a cylindrical form, and above, a crown of thirteen rings of glass, forming by their union a hollow cage of polished glass, 10 ft. high and 6 ft. wide.* Mr. Allan Stevenson, after a minute inspection of this wonderful apparatus, says, "I know of no work of art more beautiful or creditable to the boldness, ardour, intelligence, and zeal of the artist." Since the year 1855 Messrs. Chance have produced about 170 of these dioptric lights, some of which were of 2,000*l.* value. One of the most powerful is fixed

off one of the Shetland Islands, and others of great power are to be seen at Orme's Head, and Europe Point, Gibraltar. Messrs. Chance have succeeded in honourably competing with their French rivals; although, in the absence of any assistance or encouragement from the State, such as is afforded across the Channel, they have not been able to carry the enterprise to its present stage without considerable pecuniary loss.

FROM ROME.

THE restoration of the interesting and ancient church of Sta. Maria, in Trastevere, is being proceeded with, and carried out in a very costly manner. The beautiful pavement, for which this church is celebrated, is being mended and restored with small pieces of marble from the "marmorata," the treasures of which seem nearly inexhaustible; for not only are immense blocks of marble found upon the ancient quay and strand, but on removing portions of the water wall, it has been discovered that large pieces of marble have been built in, forming a kind of core. This, probably, arose from the landing-quay having been heightened even during the Roman times, when it was found to be less troublesome to build in blocks of marble which were *in situ*, than to bring stone from a distance.

The new Scotch College, erected from the designs of the late Sig. Polletti, has been opened for several weeks. It is in the style of Bramante, and is on the whole a satisfactory and striking building. It is, perhaps, to be regretted that the unsightly old chapel has not also been rebuilt.

An atrium of noble dimensions is now being erected at what we should call the west end* of St. Paul's "Without the Walls." It is square in form, and its walls are continuous with those of the external aisles of the nave. The design comprises also a large octagon baptistery, which is to be entered from the side opposite the end of the church. This, however, has not yet been commenced. The whole work is of the most costly description; the columns, cornices, &c., are of granite and fine marble.

The church of the English College is being slowly carried on. The aisle walls are now their full height, and the columns in their places, but about 1,000*l.* more are required to finish the walls before the roof can be commenced. We are sorry to say that the design of this building is anything but satisfactory; for, although its architect, Sig. Vespigniani, is a man of great talent, he is certainly not at home in Romanesque work, and we fear that the whole building will have a flat, bald appearance. The great doorway, which is nearly completed, is crowded with ornament, but quite devoid of character, from the want of sufficient projection and depth of recessing. The foundations of this building swallowed up an immense sum of money, as they had to be taken down nearly 40 ft. below the level of the street; and at that distance below the present city the pavement of a large market-place was discovered intact.

The decoration of St. Lorenzo "Without the Walls," which was commenced some years ago by Fracasini, is now completed as far as the nave of the church is concerned. The general effect is very rich and agreeable, and all the ornamental portions are very satisfactory. Large frescoes have been introduced into the triforium space, four on each side. The subjects are as follow:—

North side.—1. Ordination of Stephen. 2. St. Stephen before the Sanhedrim. 3. Stoning St. Stephen. 4. His Entombment.

The two first are by Fracasini, and the others by Nardi and Baradi.

South side.—1. St. Lawrence distributing Alms. 2. St. Lawrence before the Judges. 3. St. Lawrence on the Gridiron. 4. Entombment in the Catacombs. As in the former case, the two first are by Fracasini, and the latter ones by Nardi and Baradi. The spaces between the clearstory windows are occupied by figures of saints and popes connected in any especial way with this church. The borders and ornamental portions are in the Early Byzantine style, and are by far the best modern examples of that kind of work to be found in Rome. The colouring of the roof is in imitation of St. Miniato's, at Florence, and looks rather too gaudy and crude; however,

ancient examples often have the same defect. The decoration of the choir is to be proceeded with shortly.

The Church of St. Augustino, which was conspicuous amongst the Roman churches for its cold and bald interior, now no longer merits that reproach, as the whole building has been most sumptuously decorated, and its pilasters are lined with coloured marble. The arabesques are beautiful examples of Raffaellesque decoration, charmingly designed and most delicately executed. The effect of the whole is singularly rich and harmonious.

The same may also be said of the new decorations of Sta. Maria, in Aquiro, generally known as "Orphanelli," the interior of which has been most charmingly treated in colour. The stucco work here is well worthy of notice, as it is singularly beautiful; marble rails and pilasters have been added, and four fine marble statues of the doctors of the church. Many other minor works of restoration and decoration are being carried on, but these are the most important.

THE COMPLETION OF ST. PAUL'S.

At the meeting to be held on the 13th inst., an appeal will be read, from which we may usefully extract portions in advance in the interests of the undertaking:—

"That the interior of St. Paul's is incomplete; that Wren's plans were never carried out; that his intentions were in several respects thwarted and his conceptions spoiled; and that the result is a church, however structurally beautiful and magnificent, and in some respects unequalled, yet cold, bald, and desolate, and almost repulsive, is undeniable. That these facts are not sufficiently known is the only excuse which can be urged for an apathy exhibited towards this noble cathedral for the last 150 years."

"It is almost impertinent, as it ought to be superfluous, to observe, that in London, and for the cathedral of the richest city and diocese in the world,—London, growing as it is daily in architectural splendour,—London, the seat of the Court and Legislature of the greatest of existing empires,—London, the very chosen home of munificence and liberality, whose merchants are, in truth, princes, and where the accumulation of wealth in all the pursuits of life is increasing to an extent which it would be difficult to exaggerate—the present condition of St. Paul's is nothing less than a national reproach and scandal. There is not a town or parish in the empire—and in the empire our colonies must be included,—and there is not a community in which the speech and blood of Englishmen prevail, to which the credit of London ought not to be dear."

"The committee would be guilty of insincerity were they to conceal from those to whom their appeal is addressed, that Wren's work, as Wren proposed it, will cost, not thousands, nor even tens of thousands, but as much, perhaps, in its final completion, as 250,000*l.* At the same time it is not to be denied that those who in this great empire can give each his 1,000*l.* for a purpose alike religious and patriotic, are not to be exhausted by the figure of 250. It can scarcely be expected that such a sum would be raised at once, and its expenditure would necessarily be spread over many years."

"As regards the present, it is scarcely necessary to remark that St. Paul's, ever since Wren's death crying aloud for assistance, does so particularly now, when architectural works of great sumptuousness, especially in the City of London, are daily rising; when more and even more costly works, such as the Law Courts, are undertaken; when our own times have witnessed the completion of another great work conceived by Wren, but unhappily long frustrated—the Thames Quay; when the present generation has seen the completion of Cologne Cathedral, delayed for nearly five centuries and a half; and amongst ourselves the restoration of *Chichester* amongst ourselves the restoration of *Chichester* at a cost of upwards of 58,000*l.*; of *York*, which has cost 88,000*l.*; *Llandaff*, 30,000*l.*; *Worcester*, 23,000*l.*; *Ely*, 50,000*l.*; *Hereford*, 40,000*l.*; *Lichfield*, —, *Wells*, 23,000*l.*; *Salisbury*, upwards of 30,000*l.*; *St. Patrick's*, Dublin, upwards of 30,000*l.* (defrayed by the munificence of a single person, Sir Benjamin L. Guinness); when the completion of *Bristol*, of which the nave was never built, is steadily advancing; and when plans are matured for the restoration of *Chester* and *Exeter*."

"The Ecclesiastical Commissioners are in the net receipt of about 90,000*l.* a year, subject

* Illustrations and particulars will be found in a previous volume of the *Builder*.

* We believe in reality it is the east end, as St. Paul's is built west and east.

moreover to a prospective increase, from the decanal, capitular, and prebendal estates of St. Paul's. These revenues are now expended on the spiritual and ecclesiastical interests of the whole country. That is to say, all England is at the present moment largely benefited by the wealth of St. Paul's. Had these large revenues not been diverted from the Cathedral of London, St. Paul's might well have been called upon to provide for its own completion and decoration. As it is, the whole country stands largely indebted to St. Paul's."

"Sir Christopher Wren's views are consistent with the most magnificent ideal. We know that mosaic painting, rich marbles, and sumptuous gilding entered largely into the calculation of what he thought was due to his design."

"The better to illustrate the idea of the magnificence which has been imagined, let the entrance be supposed at the west end, about to become the easiest access to the cathedral. On passing through bronze doors richly charged with devices, the first most striking effect would be produced by the brilliant roof covered with mosaic patterns, and rich with gold. The cupola immediately overhead, 40 ft. in diameter, and the panels of the exquisite side chapels, would be pictorially treated in the same material. The walls relieved with marble slabs and marble inlay; the pavement also and the windows, enriched with colour, must be so treated as to preserve a due regard for breadth of effect and the necessity in St. Paul's for a large amount of unobstructed sunlight. All panels to be filled with coloured marbles or sculpture, and no niche to be without its statue. The nave and transepts must, however, be in some respects subordinate to the choir."

In the great dome, which has been happily called the very 'essence of the building,' the *grisaille* pictures of Sir James Thornhill cannot fail, ultimately, to give place to Sir C. Wren's cherished wish for mosaic pictures. And, in addition to these, the drum and the eight spandrels (the latter already commenced in mosaic) will afford grand scope for the highest efforts of art and magnificence.

The roof of the choir should be a splendid and impressive work in mosaic, elaborate while massive and dignified in general effect, surpassing the richness of the rest of the church. The windows in the apse will here also be more fully coloured; and the marbles, whether used structurally as replacing the stonework of the principal pilasters, or in panels and inlaid patterns on the walls and pavement, would all be arranged so as to impart a fuller idea of sumptuousness. This must especially be the case with the ciborium and the choir-screen already referred to.

It would be the aim of the promoters of this work to make it the occasion of educating and advancing public feeling in the application of the noblest and most beautiful products of human intelligence and skill to sacred things, and for the advancement of national art. It would be their desire to prefer what was calculated to give religious dignity and artistic value to the building to what is merely fanciful or ornamental merely as ornament.

The following words are adapted and quoted by Sir Christopher Wren himself, and they will fitly serve to illustrate his views and those of the committee with respect to his work:—

"'Painting and sculpture,' said the judicious *Sieur de Cambray*, 'are the politest and noblest of ancient arts, true, ingenious, and claiming the resemblance of life, the emulsion of all beauties, the fairest of records of all appearances, whether celestial or sublimary, whether angelical, divine, or human. And what art can be more helpful, or more pleasing to a philosophical traveller, an architect, and every ingenious mechanic? All must be lame without it.'—*Parentalia*, p. 262."

ST. SAVIOUR'S CHURCH FOR THE DEAF AND DUMB, OXFORD-STREET, LONDON.

THE "memorial stone" of this building was laid by his Royal Highness the Prince of Wales on Tuesday last. The whole area of the site (which is at the corner of Queen-street and Oxford-street) was covered in and tastefully decorated with a profusion of flags and banners. Seats were provided for about 1,000 spectators, and the whole proceeding passed off most satisfactorily.

An address was read by the Archbishop of York, to which the Prince returned a gracious reply.

The trowel, made for the occasion by Messrs. Hart & Peard, was presented to the Prince by the Marquis of Westminster; the architect, Mr.

A. W. Blomfield, handing to him at the proper time the level and the mallet. Giving three blows with the mallet, his Royal Highness said,—

"In the faith of Jesus Christ we lay the foundation-stone of the Church for the Deaf and Dumb, to bear the name of St. Saviour's, in the name of the Father, and of the Son, and of the Holy Ghost. Amen."

On the right hand side of the platform were ranged between 150 and 200 of the deaf and dumb, who, while they appeared to enter thoroughly into all that was going on, were themselves objects of the greatest interest to the rest of the spectators. The Rev. Samuel Smith, the indefatigable secretary and chaplain of the association, explained to them all that went on in "sign language."

The building when finished will present one front to Oxford-street and one to Queen-street. It consists of a large lecture-hall or room for meetings, with retiring-rooms and committee-rooms below and the church above. Owing partly to the shape of the site, and partly to the peculiar requirements of those for whose use it is being erected, the building will be unusual in plan and in appearance. The lecture-hall is a room about 38 ft. square, with shallow projections on each side, giving it generally a cruciform character. The recesses thus formed in the site are used as areas where required for the admission of light, or utilised for retiring-rooms, staircases, &c.

The church at the floor level (about 8 ft. above the street), takes up the same plan, except that an apse, containing the altar, is corbelled out over the projecting arm of the cross towards Oxford-street. About 20 ft. from the floor level the angles of the square are cut off with arches, buttressed by the walls of the projecting arms, and the square becomes an octagon. The cruciform projections are next arched off, and the simple octagon is left. This will have a groined ceiling pierced with a circular opening in the centre for a sunlight. The four sides of the octagon above the angles of the square will be pierced with large three-light windows and the apse will be lighted with five lancets, and will be groined with stone and brick.

The principal entrance to the church will be in Queen-street, and it is in contemplation to build a chaplain's house in the same street adjoining the church. Externally the main building will be covered with a high-pitched octagonal roof, with a circle of small lucarnes near the apex. The other roofs are of high pitch, and abut on the main building at various levels. The roofs will be slated. The style of the building is Early Pointed, and the materials are red brick and stone.

The church will accommodate about 250 worshippers, and it is so planned that while meeting all the requirements of the deaf and dumb, it may be equally available for a hearing congregation and the ordinary church services. Mr. Macey is the builder employed.

EXCURSION OF THE LIVERPOOL ARCHITECTURAL SOCIETY.

THE members of this society made their annual excursion on Saturday last, the places visited being the churches at Warrington and at Winwick. The party, in the first instance, went round by Newton Junction (about five miles from Warrington), and spent some time in inspecting the machinery and general working of Messrs. Gillespie & Mason's paper manufactory at Newton, and proceeded thence to the new waterworks and reservoir for the Warrington district, now nearly completed, at Winwick, under the superintendence of Mr. Chas. H. Beloe, C.E. The reservoir is formed entirely with artificial embankment, consisting of a concrete wall in the centre perpendicular on the outer face, and battering, from 2 ft. to 8 ft. thick on the inner face, which is lined with brick and with a coating of asphaltum an inch thick between the concrete and the brick. The outer slope of the embankment is formed with earth in the usual manner. The whole reservoir is to be vaulted with brick, on stone columns, and entirely covered in, when finished: large piers of brickwork being built out from the inner face of the embankment to form abutments for the vaulting. The church of Winwick, though mostly of very late date, possesses considerable interest, and exhibits somewhat curious features, especially in the north arcade of the nave, the upper portion of which, above the impost, has been rebuilt upon the old piers, with a thinner wall than before, so that the wall-face sets back

two or three inches from the face of the pier. The piers themselves are of a very unusual plan; and, from the appearance of the bases and the very irregular line of the fillets and mouldings, it was suggested that they were old Norman piers, cut into rolls and hollows by some not over-skilled village mason. There are several fine brasses in the church in good preservation; also an oak rood-screen by the late Mr. Pugin, and a pulpit and font designed by Mr. Paley, of Lancaster. The parish church at Warrington, which was the last object of the excursion, was rebuilt about sixteen years since, by the Messrs. Francis, of London. The old church, on the same site (some portions of which are preserved in the new edifice), was a cross church, with a square tower, which it was originally intended to retain; but, upon pulling down the nave walls for restoration, one of the piers of the tower "followed suit." It was efficiently shored up; but as it appeared, on examination, that the tower had settled hopelessly out of the perpendicular, that the walls and piers were only casings of masonry packed with rubble, and that the foundations were exceedingly defective, the work was stopped until funds could be raised for re-building the tower. It is singular, by the way, how often the necessity for efficient foundation seems to have been overlooked by the Mediaeval builders; the same thing was found with regard to Chester Cathedral lately; the foundations of the Lady Chapel all required to be underpinned, to prevent the walls actually falling over from failure of the ground. The necessary funds having been collected chiefly through the exertions and energy of the present rector (the Rev. Mr. Queckett), the architects proceeded to build what is now, in fact, a new church, though retaining the plan, and some features of the old one: in particular the vaulted crypt, under the chancel, has been carefully restored, enough of the springing of the old vault having been left to determine the section and course of the vaulting ribs. The present church is a fine and very well-built structure of late Decorated style, with a spire 300 ft. high, which, though perhaps somewhat too slender in proportion, is, nevertheless, decidedly a fine object, and rises up from the flat country as a conspicuous landmark for miles round. There appear to have been an interest and spirit evinced by the good people of Warrington in contributing to the re-erection of their church, which does honour to them. Many portions of the church (each of the carved capitals of the nave, for instance) are gifts from individuals among the congregation, and the attempt has been made to perpetuate the memory of those who have been interested in the work by carving their portraits as corbels to the labels of the arches, and in other situations. There are in the church no less than two hundred such portrait corbels, among which are recognisable likenesses of Colonel Wilson Patten, the late Bishop of Chester, and other local celebrities. The society finished their day by dining at Warrington, returning to Liverpool in the evening.

READING GRAMMAR SCHOOL.

THE chief stone of this new building has been laid by the Prince of Wales as Past Grand Master of the Freemasons. His Royal Highness was accompanied by the Princess.

The site for the school buildings, comprises 10 acres of land on the Redlands Estate, situated near the Berkshire Hospital, on the outskirts of the town. Mr. Alfred Waterhouse is the architect. The entire block of buildings, as designed, consists of two masters' houses, one at either end; a large common hall or school-room in the centre, and between it and them the various apartments for school purposes, and for the use of the boys. It is proposed to place the building, which will have a total frontage of 400 ft., at the upper end of the site, so as to have as much space in front for playground, cricket-field, &c., as possible, and leave room for future masters' residences in the lower portion of the ground. The building has been planned in a straight line rather than in a quadrangular form, in order to receive the maximum amount of sun and air. Each boy will have his own bedroom, and each bedroom its own window. The trustees have recently accepted a tender from Messrs. Parnell & Son, of Rugby, for the erection of the central common hall and school block, the western wing, and the entrance lodge, for the sum of 12,154l. 10s. 7d., with power to the trustees to require the contractors to erect the buildings

comprising the eastern wing for the additional sum of 6,552l. 17s., making a total sum of 18,707 7s. 7d. This sum, with the collateral expenses, will bring the entire cost to about 20,000l., exclusive of the purchase of the site. The subscriptions already received amount to upwards of 9,000l., and the list includes several donations of 500l.

PICTURES FOR THE ART-UNION OF LONDON.

The following are the principal works selected by prizeholders since the publication of the former list:—

From the Royal Academy.—The Vestal, E. Crowe, 200l.; Highland Cattle going South, Henry Garland, 75l.; Mountain-Torrent, near Coniston, R. Harwood, 60l.; The Worsted-winder, A. Stock, 35l.; Take a Run in the Garden, C. Armytage, 25l.; A Backwater on the Wey, Miss A. Escombe, 20l.; Shepherd's Daughter, G. Wells, 20l.

From the Society of British Artists.—Hillsborough, J. Tennant, 51l. 15s.; The Moorland Bridge, G. A. Holmes, 45l.; Llyn Haeise—Moel Siabod, J. Syer, 45l.; The River Llugwy, near Capel Curig, S. P. Percy, 45l.; Summer, A. W. Williams, 40l.; At Ingleby, on the Trent, G. S. Walters, 35l.; Leith Roads, J. J. Wilson, 35l.; Summer-time, J. H. S. Mann, 35l.; River-scene, Moonlight, J. C. Thom, 31l. 10s.; La Feticle More, E. Roberts, 30l.; A Pool on the Lowther, Walter H. Foster, 35l.; The Shepherd Boy, G. A. Holmes, 25l.; Morning on the Thames, T. F. Wainwright, 25l.; Near Arundel, Sussex, T. Tyne, 25l.; Ebb-tide, A. J. Woolmer, 20l.; A Mountain Spring, G. Wells, 20l.; Beech-trees, Up Park, A. B. Cole, 20l.

From the Water-colour Society.—The Rialto, Venice, William Callow, 50l.

From the General Exhibition of Water-colour Drawings.—The Birth of a Fairy, J. A. Fitzgerald, 30l.

INSTITUTION OF SURVEYORS.

The annual dinner of this institution was held on Monday evening, in the large hall of Willis's Rooms, and was attended by a numerous party of members and associates; Mr. Richard Hall, the president for the current year, occupying the chair.

After the usual loyal and patriotic toasts, that of the army and navy being responded to by Lieut.-Colonel G. A. Leach, R.E., had been given, the chairman presented to the honorary secretary, Mr. J. W. Penfold, a service of plate which had been subscribed for by the members and associates, in recognition of his services in connexion with the foundation of the institution during the subsequent two years. Mr. J. H. Lloyd proposed the toast of "Prosperity to the Institution;" and, after his health and that of the chairman and of the past president, Mr. John Clutton, had been honoured, the proceedings terminated. It was mentioned incidentally that the institution now numbers 240 members and associates, including a large proportion of the leading surveyors.

THE FRACTURED COLUMNS, ST. SAVIOUR'S, LINCOLN.

A REPORT on this disaster has been received from Mr. Ewan Christian by the committee. In the course of it Mr. Christian says,—

"And first as to the stone of which they are constructed, and of the weight they are required to support. There is unquestionably a difference in the quality of the stone, but, excepting from natural vents and defects which are not discovered from without, I have no reason to doubt the general goodness of the stone that has been used, whether in the bases or the shafts of the pillars, or other portions of the work. Many of the stones which have cracked are of excellent quality.

As nearly as I can calculate, the dead weight at present discharged upon each pillar is less than 45 tons, allowing a broad margin. From the best information I am able to obtain, the result of very careful experiments recently made, the crushing weight of the best Ancaster stone is something less than 125 tons to the square foot, and the weight from which by experiment first injury was produced, 84 tons 17 cwt. The superficial area of the shafts is 3'14. If, therefore, we take 84 tons only as the commencement of danger, it appears that the load upon each pillar is less than 1-6th of that necessary to produce first fracture, and somewhat less than 1-9th of what is needed for crushing. It may, therefore, I think, be safely assumed that the fractures have not occurred from want of strength to bear their load in the stone required by specification to be used for the pillars. It is certain, nevertheless, that in estimating the power of stone to bear pressure, it is always assumed that there should be a fair proportion between height and bed, and that the power to bear weight is greatly diminished by any such imperfection of bed as may cause partial pressure. It follows, therefore, as a natural consequence, that in building a pillar-shaft in courses of stones, the utmost care is needed for making the beds perfectly even and uniform, and that any irregularity in this respect must be an element of weakness, and that every increase in the number of beds also increases this risk.

It is also of the utmost importance that in building a long wall upon arches and pillars, great care should be exercised to stay them against lateral motion, because any vibratory movement acting upon the pillars is in itself an element of danger.

As regards the circumstances under which these arcades were built, I am informed by both architect and builder, that from the commencement of the work, and until within the last few weeks, the western end of the nave, where hereafter the piers of the western tower arch are to be built, has remained entirely open; the eastern end of the nave was also disconnected until the end of last autumn, when the arch next chancel was keyed in; consequently, the clearstory walls, which rest on the arcades, had no structural connexion at either end until they were raised to their full height, and had no structural support whatever, except from the abutting walls at the ends of the aisles, and at the north-east corner, where the worst fractures have occurred, of an arch only."

He arrives at the following conclusions:—

"1. The departure from the requirements of the drawings by increasing the numbers of the stones, and consequently of the beds in the shafts of the pillars.

2. Imperfection of working in the beds of the stones, and imperfection and insufficiency in thickness of the mortar joints between them.

3. The racking of the heavy walls which the pillars support, each 167 ft. long and 40 ft. high, disconnected at each end, and left entirely without lateral stay or support, caused by the violent gales of last autumn, and other like causes before incidentally referred to. Secondly, as to the liabilities involved, to which your resolution refers.

As regards the Architect.—1st. I am clearly of opinion that in respect of constructive design, whether as shown by the drawings or described by specification, whether as to quantity or description of material, the provisions made by him are in every respect sufficient for sound and durable construction.

2nd. That the omission from the specification of all provision for temporary supports, whilst building, especially under the circumstances under which this church was erected, was undoubtedly an oversight, but one that, had the work been intrusted to a contractor of ample means, plant, and experience, would probably have been met by his own provision for temporary insurance.

3rd. That having made careful drawings, showing the exact number of stones to be placed in each pillar, he should have required the contractor so to execute them, and not have allowed thereby his responsibility was shared, and in part removed, he should not have allowed the contract so to be framed as to invest the committee with equal authority to his own in respect of approval and direction of the work, nor should he have submitted, except under written protest, to the instruction that he was not to visit and inspect progress of work, unless he was sent for by you.

As regards the Contractor.—I am of opinion that he has incurred responsibility, 1st, in constructing the pillars with a larger number of stones, and consequently of beds, than are shown by the drawings.

2nd. By insufficient care in working the stones, and in forming perfect beds between them of sufficient thickness; and,

3rd. By neglecting to take any precaution whatever for securing the arcade walls during erection, he being bound by contract to make good all damages arising from 'storm or tempest,' and to deliver up the building when complete, 'free from all flaws, cracks, settlements, or other defects.'

And I am further and clearly of opinion that the defects which have occurred result from these deviations from the duty of a builder, and consequently that, excepting on the second point as regards architect's liability, he alone is responsible for making them good."

He gives reasons, however, for considering that it would be hard and perhaps unjust to require the builder to do it at his own cost.

IRONSTONE IN OXFORDSHIRE.

THERE has recently sprung up, near the village of Adderbury, Oxfordshire, a new industry which promises to give employment to a number of men, and to benefit all those who are connected with it. A stratum of ironstone has been discovered on the estate of Mr. William Chamberlin, of Adderbury House. For many years past it has been thought that ironstone was to be found in this district; but it is only recently that systematic efforts have been made to test the ore, and find a market for it. This has now been done. The Adderbury Ironstone Company are the lessees of the mineral, and pay a royalty to the proprietor.

This valuable deposit occurs on certain rising ground, which overlooks the pleasant valley of the Cheswell, and is distant about a mile and a quarter from the Oxford Canal and the Great Western Railway. A tramway has been laid from the quarry to the canal and the railway, and the trucks, which contain 35 cwt. each, run down an inclined plane part of the way. On the level they are drawn by horses. By means of simple contrivances familiar to those who are conversant with mining operations, each wagon is weighed, and its contents afterwards emptied either into boats or into trucks, to be conveyed to various districts in Wales, and also to Wednesbury, Dalston, Bilston, and other places.

The deposit is found about a yard beneath the surface, and its depth varies from 12 ft. to 14 ft. The ore, it is said, contains from 38 to 45 per cent. of iron, and the limestone mixed with it greatly facilitates the smelting process.

There are supposed to be 150 acres, on Mr. Chamberlin's property, containing this mineral. 100,000 tons have been raised already; and each acre produces 40,000 tons. Therefore, at the present rate of consumption (52,000 tons a year), the existing supply will not soon be exhausted.

Underneath the iron stone, there is found a bed of blue clay from 14 ft. to 16 ft. deep.

It took three years to persuade the smelters to have anything to do with this ore; but their prejudices were at length overcome, and the supply from this quarter, although on the increase, is at present unequal to the demand.

At Sterple Ashton, King's Sutton, Over Worton, and the Compton Hills (the last-mentioned place is about a mile and a half from the Penny Compton Station, Great Western Railway), ironstone has been found; but the land carriage in some instances has proved so expensive as seriously to interfere with the work of raising it except at a loss. In other instances its depth beneath the surface has formed a great obstacle to its successful manipulation.

Immense quantities of this ore have, within the last few years, been found in Cleveland. We learn that the iron-bearing area in the Tees district is spread over 140 square miles. In one portion of the area (that containing first-class stone, yielding about 31 per cent.) the deposit is 27,000 tons per acre. In the portion of the field consisting of second-class stone it produces 18,000 tons per acre, and the yield is under 28 per cent. The quantity available in all, in Cleveland, is estimated at 4,500 millions of tons. The present production is about five million tons per annum, at which rate it would last 900 years. But the Durham coking coal, used for smelting it, will probably be exhausted sooner. The Cleveland iron district is, at present, one of the most active in the kingdom. The towns of Darlington, Stockton-on-Tees, Middlesbrough, and the two Hartlepoons, have benefited greatly by the new industry, and an immense amount of capital is employed in its various branches. Iron shipbuilding, and the construction of railways all over the world, have increased the demand for iron. This country appears to have an unlimited supply of the raw material, and coal is still abundant. The landowners in Oxfordshire, Northamptonshire, and other counties, possess, no doubt, in many instances below the surface of their estates, treasures more valuable than the rents of their farms. They would do well to test their capabilities in this respect under intelligent operators. It is understood that there are other lands in the valley of the Owerwell, besides those already mentioned, which contain valuable iron strata, and some of these are close to railroads and canals. It may be added that the men employed at this new industry at Adderbury are the labourers of the district.

THE IMPROVEMENTS OF THE SERPENTINE.

A PRELIMINARY meeting of gentlemen interested in this question, and which originated with the standing committee for promoting an improvement in the condition of the Serpentine appointed some time past at a public meeting presided over by Lord Harrowby, was held at the British Hotel, Cockspur-street, Dr. Aldis, medical officer of St. George's, Hanover-square, in the chair. Mr. J. Lilwall, the acting secretary, read a letter from Dr. Druitt, in which he said:—"It is clear, *prima facie*, that the mud should be removed. No dependence can be placed on any attempt to bury or cover it, and if it remains it will be a contamination to the pure water that covers it and a danger to bathers." After a somewhat lengthy discussion of the general question, a series of resolutions bearing on it in its sanitary aspect, and also with regard to the general safety of bathers, was, on the motion of Dr. Tilt, seconded by Mr. T. Harry Hill, carried, together with an expression of thanks to the Government for having undertaken a work which had been unsuccessfully urged on successive administrations during the past twenty years.

On Tuesday last an influential deputation waited on Mr. Ayrton, to induce him to remove the whole of the mud, and to lessen the depth of water. The Chief Commissioner, however, declined to do either. He said the conclusion he arrived at was that nothing had been said by the deputation to induce him to alter the course commenced by his predecessor. The specification was to make the bottom and depth satisfactory, and also of a proper slope. That specification had been agreed to by his predecessor, and it was his (Mr. Ayrton's) duty to follow what he had sanctioned, unless any cogent reason could be shown to the contrary.

Mr. Lilwall, referring to Mr. Ayrton's statement, that he was only carrying out the plans of his predecessors, observed that the history of

the Serpentine itself afforded a striking precedent for the Chief Commissioner modifying the arrangement of his predecessor if necessary, and mentioned that a few years ago one commissioner obtained a vote of 17,000*l.* for carrying out a process of purifying the water by means of filtration, when his successor, the following session, had the courage to reverse that decision, for which he obtained universal praise.

The deputation were not particularly pleased with their reception.

SINKING CAISSON FOR EAST RIVER BRIDGE, NEW YORK.

THE first step of progress in the actual building of the East River Bridge may be said to have been taken upon the occasion of the caisson, which goes to form the foundation for the stone pier of the bridge upon the Brooklyn side, being placed in position, and lowered into its final resting-place. The caisson was towed to Dock-street by steamers. Among those present, were Messrs. William C. Kingsley, Superintendent of Construction; Colonel W. A. Roebling, Engineer-in-Chief; Horatio Allen, Consulting Engineer; C. C. Martin, Assistant Engineer; Colonel Paine, Assistant Engineer and Constructor; Dr. S. Rule, Inspector; and T. C. Douglass, Master Mason.

The work was done under the general supervision of Mr. Henry C. Murphy, President of the East River Bridge Company, and Mr. John A. Roebling, Chief Engineer of the same.

The caisson is 170 ft. long, 102 ft. wide, and 18 ft. deep. The material of which it is made is yellow pine, filled in with concrete, one floor rising above the other. Its weight is 2,800 tons, and taking into consideration that over 3,000,500 ft. of oak and pine lumber were used in its construction, it may be very correctly described as a huge oblong mass of timber. Ten feet more of timber are to be laid on top, after which the mason-work will be begun. In the meantime, iron pipes with ladders inside will be sunk, which will enable men, by the aid of an air-pump, to descend and dig. As fast as the mason-work is laid, the caisson will sink, until it is completely embedded in the earth, where it will probably remain for centuries. Building operations will soon be commenced. There will be three gangs of 175 men each employed to go down the pipes. They will excavate within the caisson until it is by this process sunk from 30 ft. to 50 ft. deeper than at present.

KIDDERMINSTER NEW INFIRMARY.

THE memorial stone of this new edifice has been laid. The new building will occupy an elevated and healthy site on the top of a very steep bank in Mill-street, adjoining the Bridge-north-road, just outside the town. The general arrangement of the main building will be that of a central block of three stories, containing the principal entrance and staircase, committee and operating rooms, matron's and surgeon's residences, and other rooms and offices forming the administrative department. The wards, of which there are four for six beds each, will be in two stories, and extend, the men's on the right and the women's on the left-hand side of the centre building, in the same general line, and they will terminate by small gables projecting towards the front, which will contain the baths and lavatories for the use of the wards. These latter will give more than 1,733 cubic feet of space to each patient; they are lighted with windows to the front, and smaller windows near the ceiling at the back, to allow a thorough current of air to be obtained when desired. A general system of ventilation has, however, been devised, consisting of warm flues for extracting vitiated air, and inlets for admitting fresh, either warmed or not at pleasure. At the outer ends of the wards on each floor will be small rooms or enclosed balconies, with large windows for opening in fine weather for the use of convalescents. The closets will be separated from the wards by lobbies, with openings at each end, to create a cross current, thereby preventing the entrance of impure air to the wards. This is further guarded against by screens enclosing the doors of the lobbies. Between the wards and administrative centre block will be placed the nurses' rooms and conveniences. The dispensary will be attached to the end of the infirmary nearest the town, and will have large waiting, dispensing, and consulting rooms, &c. Behind the centre of the main building, and detached

from it except by a passage of communication, is the kitchen department, containing the usual kitchen offices, with yard and outbuildings, and the washhouse and drying closet, with laundry and linen-rooms on the upper story, which will also comprise the sleeping-rooms for servants. Behind all is the fever ward, separated by a considerable distance from the other buildings. It consists of wards for males and females, each for two beds, with the requisite nurses' rooms and offices.

The style of the architecture is Gothic, with simple details of an early character. The walls are built with ordinary red bricks and occasional bands of blue, the facing being of picked bricks laid in dark mortar. Dressings of Bath stone have been sparingly used. The roofs will be covered with red and grey tiles. The principal entrance is by a porch in the centre of the front, with moulded stone arch and jambs. Over the gable which surmounts the arch will be a canted oriel window, with a gable above terminating in a finial and vane. The windows throughout the building will be of lofty proportion, and grouped in pairs and triplets, those of the ground-floor having pointed arches of brick with stone moulded transoms, the line of which will be continued by a flat band of stone throughout the building. The windows of the central block have stone dressings. The roof of the centre building will be hipped, and have a cornice of moulded bricks. The straight line of each ward is broken by a chimney stack, corbelled out from the wall, and resting on a central buttress. The fever ward, kitchen buildings, and dispensary are all to be carried out to harmonise with the main building.

The contract for the building may be put down at 7,000*l.*; etceteras, 1,000*l.*; land, 1,000*l.*; total, about 9,000*l.*; towards which 7,500*l.* have been promised. It is estimated that in two years 1,000*l.* more will be required, making in all 10,000*l.* The architect is Mr. J. G. Bland, of Birmingham.

ISLINGTON.

THE third section of Mr. Howitt's "Northern Heights of London," noticed by us recently, is devoted to Islington. Lysons thinks the ancient name Isendune or Isendone means the Hill of Iron, because various chalybeate springs are found in this neighbourhood. But Mr. Sharon Turner derives it from Ysseldune, or the down of the Yssel, supposed to be the original name of the river of Wells, which fell into the Fleet River. When Doomsday Book was compiled part of the parish was arable, part common pasture, and the rest consisted of woodland, oak, and beech, affording pannage for sixty swine. The population was then twenty-seven persons and their families. Some think there was a church there from Saxon times. As Macaulay tells us, even in the time of Charles II. Islington was almost a solitude, and poets loved to contrast its silence and repose with the din and turmoil of London. Evelyn tells us that after the Great Fire the fields about Islington were crowded with the thousands of people who fled from the burning city. In the reign of Elizabeth, Gerard, the herbalist, used to frequent those fields to collect the herbs and flowers that he needed. In the fields between Islington and Finsbury archers used to exercise. Fitzstephen (temp. Hen. II.) tells us that in the afternoons the youths of the city used to go out into the fields, and practise the ball and other games. In 1365 Edward III. proclaimed that the citizens should practise the bow, forbidding them to waste their time "in throwing stones, handball, football, or cock-fighting, or other such vain shows." Henry VIII. allowed the Master of the Ordnance to shoot at butts and at the popinjay. He compelled every man to furnish his son, at the age of seven, with a bow and two arrows. The art declined, though James I. and Charles I. made efforts to establish it. Islington was always famous for dairies, and Londoners liked to see the milkmaids milking the cows in the fields, and drink milk fresh from the cow. They had a great idea of the healthiness of the place, and often resorted there for lodgings. There were entrenchments here in the seventeenth century; for about 1642 the London Militia marched out, and made intrenched camps at different roads leading from the north towards the City, to defend the metropolis from the invasion of the king and the cavaliers.

At the back of Islington were ducking-ponds,—not, as might at first be supposed, for ducking scolds, but where Londoners went with dogs and

hunted down ducks procured for the purpose. There was one of these ponds in Mayfair in 1748. The Islington ponds are described as descending in succession from Liverpool-road to Lady Huntingdon's Chapel, Exmouth-street, Spa-fields. The burial-ground of the chapel was at that time a pond.

For the New River, by which the north of London is supplied with pure water, we are indebted to Sir Hugh Middleton. He was a native of Denbigh, North Wales, his father being governor of Denbigh Castle during the reigns of Edward VI., Mary, and Elizabeth. Hugh became a goldsmith in London, but obtained a great deal of money by mines in Wales. Respecting the water scheme, his object was to conduct the fine water of the springs of the Chadwell and the Amwell, near Ware, in Hertfordshire, to the metropolis. The works were commenced in 1608 under great difficulties. The distance was about thirty-eight miles, deep cuttings had to be made, and over valleys the water was carried in wooden aqueducts. The funds became exhausted, and the people of London, who were to derive such benefit from the scheme, would not subscribe. James I., however, advanced money to the amount of half the total expenditure, and the work was finished in 1613, in five years and five months from the commencement, at a cost of 500,000*l.* It did not succeed for some time, and for eighteen years produced no dividend. In 1622 Hugh Middleton was made a baronet, which honour he richly deserved. Besides this, he gained a great quantity of land from the sea at Brading Haven, in the Isle of Wight, and also discovered and worked profitably a rich silver mine in the county of Cardigan. The shares in the New River were at first at 7,000*l.* each, but soon fell almost to nill. But within the last few years shares have sold for 20,000*l.* Sir Hugh died poor, and Lady Middleton had a pension of 20*l.* from the Goldsmiths' Company.

Islington contains six districts:—St. John of Jerusalem, Upper Barnsbury, Lower Barnsbury, Canonbury, the Prebend, and Highbury, or Newington Barrow.

Highbury was famous for the springs which used to supply the City before the making of the New River. The manor of Highbury,—formerly called Tollington,—was granted by the Conqueror to one Ranulf, and the manorial rights were valued in Doomsday at 40*s.* per annum. The Manor House was a favourite summer retreat of the priors of St. John of Jerusalem. Jack Straw demolished it for them in Wat Tyler's rebellion.

Highbury Barn,—originally a farm belonging to the Manor House,—was a small ale and oake house. Barn was the word applied by milk-dealers to a farm or dairy. Highbury Barn soon became a tavern, with tea-gardens, and was much increased about 1780. Mr. Willoughby about that time added a hop-plantation and brewery, and prepared public dinners for corporate bodies, public charities, &c.: 800 people have sat down in the Barn to a hot dinner together, on which occasion seventy geese were seen roasting at one fire. Highbury Barn now comprises an hotel, public gardens, a regularly licensed hotel, and dancing-saloon.

Canonbury House, or Tower, was the country residence of Sir John Spencer, an alderman and clothworker of London, who was lord mayor in 1594. He was reputed the richest commoner of his time, and his town residence was Crosby Hall, the fine old house on the east side of Bishopsgate-street, which had been built by Sir John Crosby, and was for some time the residence of the Duke of Gloucester, afterwards Richard III. Canonbury House was very extensive, and had a tower, part of which yet remains. It was built on this spot for the prior of the canons of St. Bartholomew, and rebuilt by William Bolton, the last prior but one, who died in 1532. Several years ago, his rebus (a bolt in a tun) was to be seen in various parts of the house. A fine view could be obtained from the top of the tower. Sir John Spencer enlarged and beautified the place. In a pamphlet called "The Vanity of the Lives and Passions of Men," 1651, we read that in Queen Elizabeth's days a pirate of Dunkirk laid a plot, with twelve others, to carry away Sir John Spencer, as he came to his house; and if they had, 50,000*l.* would not have ransomed him. But Sir John stayed in London that night, and so escaped. Sir John had one child, who was to inherit his vast wealth (said to be 800,000*l.*), and she loved Lord William Compton, Lord President of Wales, who eloped with her; and her father said he would cut her off with a shilling. Queen Elizabeth was favour-

able to the match, and invited Sir John to stand sponsor with her to the first child of a young couple abandoned by their father. Sir John did so, and found that he had adopted *his own grandson*. Sir John died in 1609, and Lord Compton lost his senses by reason of the vastness of his wealth, but eventually recovered them.

It is said that Goldsmith wrote the "Deserted Village," "The Traveller," and part of "The Vicar of Wakefield" in Canonbury Tower. Washington Irving visited the house for this reason, and says, "I was shown the very apartment, and it was a relic of the original style of the castle, with panelled wainscot and Gothic windows. I was pleased with the air of antiquity, and its having been the residence of poor Goldy."

On the south side of Newington Green the old mansion of the Mildmay family stood, now converted into several dwellings. Sir Henry Mildmay, in the reign of Charles I., obtained this house, with park, gardens, &c., with his wife, the daughter of Alderman Halliday. Sir Henry signed the unfortunate monarch's death-warrant, and his property was therefore forfeited at the Restoration, except this of Newington-green, which had been settled on his daughter, by the alderman. Sir Henry's brother Anthony was on the opposite side in the civil war, and was so much attached to Charles that he attended him on the scaffold.

At the corner of the green was an old house, which, tradition says, used to be occupied by Henry VIII. Henry Algernon Percy, the unfortunate Earl of Northumberland, lived here, and being attached to Anne Boleyn before Henry saw her, incurred the monarch's severe displeasure. Henry, therefore, made him marry Lady Mary Talbot, daughter of the Earl of Shrewsbury. Anne never forgave Wolsey for his part in this, and she afterwards doubtless caused his ruin. The man whom Henry sent to arrest the cardinal at his palace of Cawood, Yorkshire, was Henry Percy, Earl of Northumberland. Henry VIII. afterwards had the brutality to make the earl one of Anne's judges, but he was taken ill in court, and died soon after.

According to tradition, the Old Queen's Head, on the Green, was the residence of Lord Treasurer Burleigh when Queen Elizabeth was here. It has been supposed that Sir Walter Raleigh converted this house into an inn. This old house was pulled down in 1820. The Pied Ball public-house is said to have been the residence of Sir Walter Raleigh, but has undergone many alterations. In the "Life of Sir Walter," by Oldys and Birch, it is stated that the tenant at that time affirmed that his landlord possessed the account-books proving that the house did belong to that distinguished nobleman.

The old church at Islington is supposed to have been built about 1483. Sir Nicholas Kempe, member of the High Commission Court under Charles I., was buried here. The new church was built early in the eighteenth century. Thomas Cooke, the miser, of Pentonville, is buried here. He left about 127,205*l.* to various charitable institutions.

Mrs. Olivia Sorres, who claimed to be the granddaughter of the Duke of Cumberland, brother of George III., was baptised here September 6th, 1821, aged 49. She managed to impose on the Duke of Kent, who allowed her and her daughter 400*l.* a year. She appeared in a court several times to enforce her claims, but repeatedly contradicted herself, and proved herself an impostor.

The Priory of St. John of Jerusalem, founded by the Knights Hospitallers, was situated in Clerkenwell; but only an archway remains. The knights rose from small beginnings. After the taking of Jerusalem, in 1099, by Godfrey de Bouillon, they offered themselves as "servants of the poor, servants of the Hospital of Jerusalem;" but they soon obtained great wealth, and resembled the Templars. John Briset is said to have founded the Priory of St. John in Clerkenwell about 1100. The Prior had precedence of all the lay barons in Parliament, and chief power over all the preceptors and lesser barons of the order throughout England. In 1240 the Knights Hospitallers possessed 19,000 lordships or manors in different parts of Christendom. Somerset, the Protector, in the reign of Edward VI., blew up the church of the Priory at Clerkenwell with gunpowder, and used the stone to build his palace in the Strand.

The earliest historical event connected with Islington noticed by Mr. Howitt is the battle fought between the Romans and British, under

Queen Boadicea, when, according to Roman writers, 80,000 Britons were put to the sword. During the reign of Edward I. the Snowdon barons accompanied Llewellyn to London, and were quartered at Islington; but they were much disgusted with the conduct of the Londoners, who followed them in crowds, staring at their garb. They left, declaring they would never again visit Islington except as conquerors.

Henry VI. was brought through Islington a captive, on his way to the Tower. For twelve months, after the battle of Hexham, he had wandered from castle to castle, in Westmoreland, Yorkshire, and Lancashire. At Bolton Hall, Yorkshire, he left his boot, spoon, and glove, and was betrayed at Waddington Hall, by Catlow, a monk, of Abingdon. At Islington Warwick met him, and ordered the spectators to show no respect to him. In 1557 some Protestants assembled at the "Saracen's Head," Islington (under pretence of seeing a play acted), were arrested by the Vice-Chamberlain of Mary's household, and committed to prison. Of these five were burnt; one at Smithfield, and four in one fire at Islington. The Earl of Essex, in time of Queen Elizabeth, when he set out to occupy the post of Lord-Lieutenant of Ireland, passed through Islington, attended by a splendid retinue of noblemen and gentlemen on horseback. In 1641, Charles I., on his return from Scotland, passed through Islington with the Queen, Prince of Wales, and Duke of York, attended by a splendid cavalcade. The next time he entered London it was as a prisoner.

Copenhagen House and Fields were so called, because the King of Denmark here paid a visit to his brother-in-law, James I. The house became a great tea-house and resort of the Londoners to play at skittles and Dutch pins. A great portion of the fields is now occupied by the New Cattle Market. Mr. Perkins, of Blotchingley, Surrey, impressed with the cruelty and inconvenience of driving cattle through the crowded streets of London, projected and built a new cattle-market, near Ball's-pond, at a cost of 100,000*l.* This was commenced in 1833, and completed in 1836. The concern was not, however, successful in a pecuniary point of view, and was extinguished by Act of Parliament, to make way for a market in Copenhagen fields. The corporation of London purchased 75 acres of the fields, and converted them into the present New Cattle Market, opened in 1855.

Mr. Howitt concludes his book with biographical particulars respecting remarkable persons who have lived in the parish of Islington.

John Lord Berners, the translator of "Froissart," proprietor of the manor of Bernersbury, or Barnsbury, lived here. His aunt was the celebrated Dame Juliana Berners, author of the famous "Treatise on Hawking," printed in 1481. She was prioress of Sopewell Nunnery, Herts, and is stated to have been living in 1460. Hollingshead says:—"She wrote also a book of the laws of armes and knowledge apperteyning to heraldes." Her works were printed at the abbey of St. Albans, on which the nunnery of Sopewell was dependent. Fuller ranks Lord Berners as the fourth literary nobleman in England, his predecessors being Lord Cobham, Tip-toft Earl of Worcester, and Lord Rivers. Lord Berners sat in the eleventh parliament, with Henry VII., and was in great favour with Henry VIII. Besides "Froissart," he translated several other works. He died in 1532, and his title became extinct.

De Foe was educated at the Nonconformist seminary here for four years, and this was all the education he ever had. He wrote some political pamphlets and tracts on political economy, and then hit on the conception of "Robinson Crusoe," which has made his name immortal.

Thomas Topham, a man possessed of immense strength, was born at Islington. At the age of twenty-four he became the host of the Red Lion, near the old hospital of St. Luke. Here he exhibited his strength by pulling against a horse. Dr. Desaguliers saw him perform the following feats:—

By the strength of his fingers he rolled up a very strong and huge pewter dish of the hardest metal. He broke seven or eight pieces of a tobacco-pipe by the force of his middle finger, having laid them on his first and third finger. He took an iron poker, about a yard long and three inches round, and struck upon his left arm, between the elbow and the wrist, as though he had no feeling, till he bent the poker to nearly a right angle. With such another poker, holding the ends of it in his hands, and the middle of it

at the back of his neck, he brought both ends of it together before him; and, what was yet more difficult, he pulled it almost straight again. He broke a rope of two inches circumference, though, in consequence of his awkward manner, he was obliged to exert four times the strength that was necessary. He lifted a rolling stone of 800 lb. weight with his hands only, standing in a frame above it, and taking hold of a chain that was fastened to it.

A print in Kirby's "Wonderful Museum," 1803, represents Topham performing the feat of lifting three hogsheads of water, weighing 1,831 lb., by means of a wooden stage, on which he stood over the hogsheads. This he performed publicly in Cold-bath-fields, May 28, 1741, before Admiral Vernon and thousands of spectators.

Mrs. Forster, the granddaughter of Milton, kept a chandler's shop, at Lower Holloway, for some years, and died at Islington May 9th, 1754, aged 66. She was the last of the family of the author of "Paradise Lost." In 1750 "Comus" was represented at Drury Lane, with a new prologue by Dr. Johnson, spoken by Garrick, for her benefit, which produced 130*l.* Mr. Howitt says she knew little of her grandfather, and that little was not good. She told of his harshness to his daughters, and his refusal to have them taught to write.

Alexander Cruden, author of the "Concordance," lived at Islington. He was actually insane, "but with a harmless though sometimes rather intrusive insanity." He was the second son of Mr. William Cruden, a merchant of Aberdeen, and was born 1701. He became a private tutor in London, and afterwards a corrector of the press and a bookseller. His shop was under the Royal Exchange. He began the "Concordance" in 1733. He dedicated the work to Queen Caroline, but as she died before the publication he suffered severe loss. He was several times put in a madhouse, but his insanity never showed itself in his works. He worked hard to improve the condition of the prisoners in Newgate, and actually succeeded by incessant application to the Earl of Halifax, the Secretary of State, in getting the sentence of one Richard Potter, who was convicted of uttering a seaman's will knowing it to be forged, commuted to transportation. He died November 1st, 1770, in the 69th year of his age.

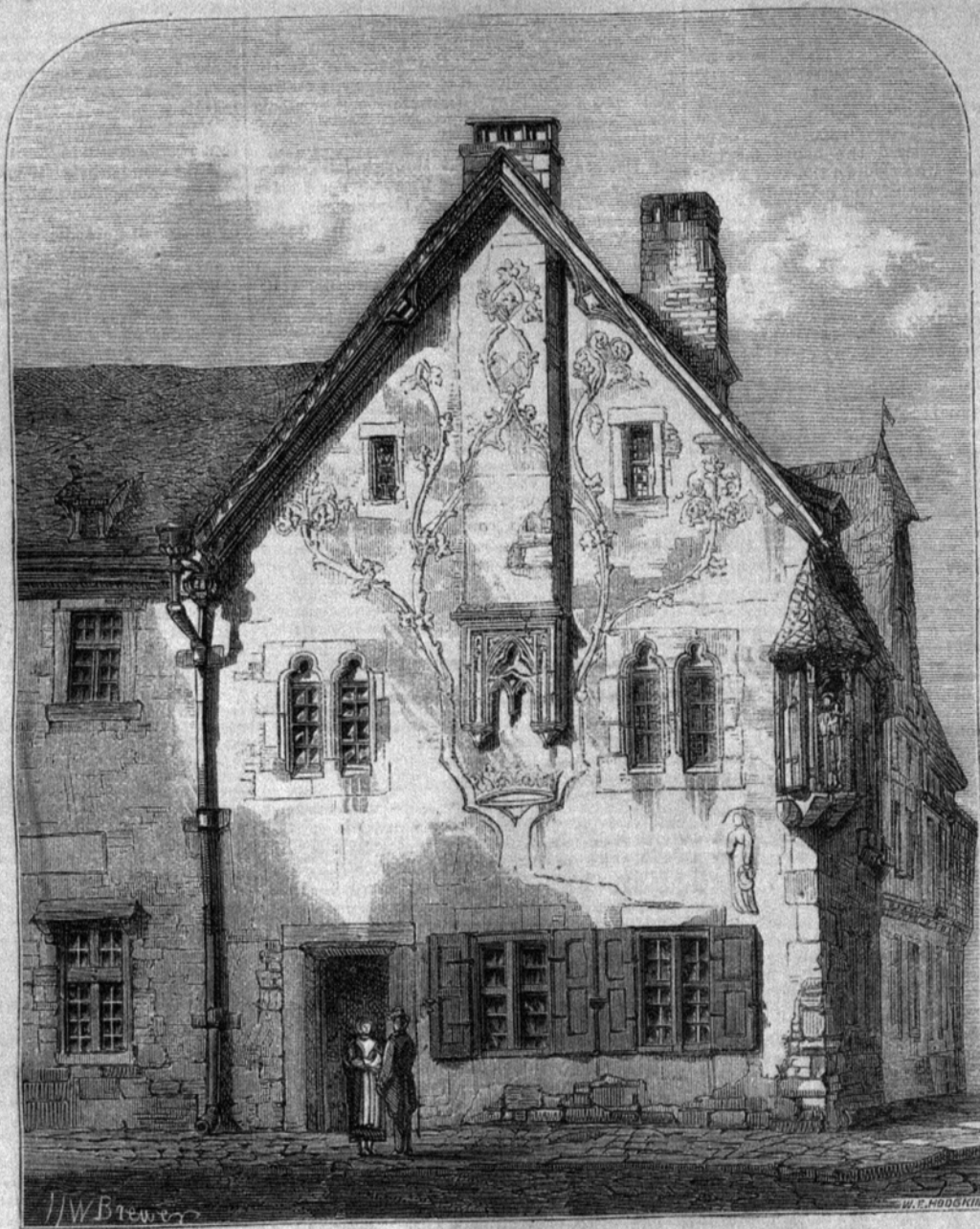
J. P., Jun.

ANCIENT HOUSE IN TREVES.

THE house of which we give an engraving is a good example of German Domestic architecture of the fourteenth century, and shows several peculiarities which are only to be met with in Treves and its neighbourhood. Of these the most remarkable are, firstly, the position of the chimney, in the middle of the gable, projecting forwards upon an elaborately ornamented corbel; and, secondly, the plaster decoration with which the whole front is ornamented. Of the first, the examples in Treves are very numerous, and the corbels upon which the chimneys are supported are in many cases very elaborate and beautiful, though nearly always of the same character,—that is, adorned with tracery resembling the head of a two or three light window.

Of the second peculiarity, the plaster decoration, this is one of the few examples left, and is certainly the only one in which the whole scheme of the decoration can be clearly ascertained. It will be seen from our illustration that the general design represents a vine climbing over the upper portion of the house. Where the branches divide is a large foliated crown; and a little lower is a graceful figure of a woman bearing a pitcher, probably the remains of some sacred subject,—perhaps the woman at the well of Samaria; but as all the other figures have been entirely obliterated, it is now impossible to decide. This plaster ornamentation was evidently cut with some sharp tool; none of it shows the slightest marks of casting. It is in very low relief, the most projecting portions are not raised more than $\frac{3}{4}$ in. from the surface of the wall. It is quite different from our old English "pargetting," as the ornament here is raised, not sunk. A somewhat similar style of decoration may be noticed upon one or two old houses at Faversham, in Kent, and Saffron Waldon, in Essex; though in all these cases it is at least two centuries and a half later in date than the example in Treves.

Another remarkable feature about this house at Treves is the wooden angle niche with statue, with the remains of the doors with which it was originally shut up at certain times. Slight traces of ancient colouring still exist upon the doors



ANCIENT HOUSE IN TREVES.

and niche, but the figure of the Madonna has been vilely daubed with red and blue within the last few years.

ST. JUDE'S CHURCH, SOUTH KENSINGTON.

THE erection of a large church has been commenced in Collingham-road, a new way leading from Cromwell-road, through "Boltone," to the Fulham-road, the whole distance being through two of Captain Gunter's estates, by whom the site for the church has been given. This new road, having been formed to communicate with Cromwell-road, is raised considerably above the land adjoining it, and the foundations of the church are necessarily much below it. To utilise the work thus necessitated, a lecture-room, 76 ft. long by 27 ft. wide and 12 ft. high, with retiring-rooms, has been formed under the eastern end of the building.

The church includes a nave and side aisles, 103 ft. long and 49 ft. 3 in. wide; a peculiarly broad transept, adding 57 ft. 6 in. by 13 ft. 6 in. on each side, and making the whole width across 76 ft. 3 in.; chancel and sub-chancel, 28 ft. long,

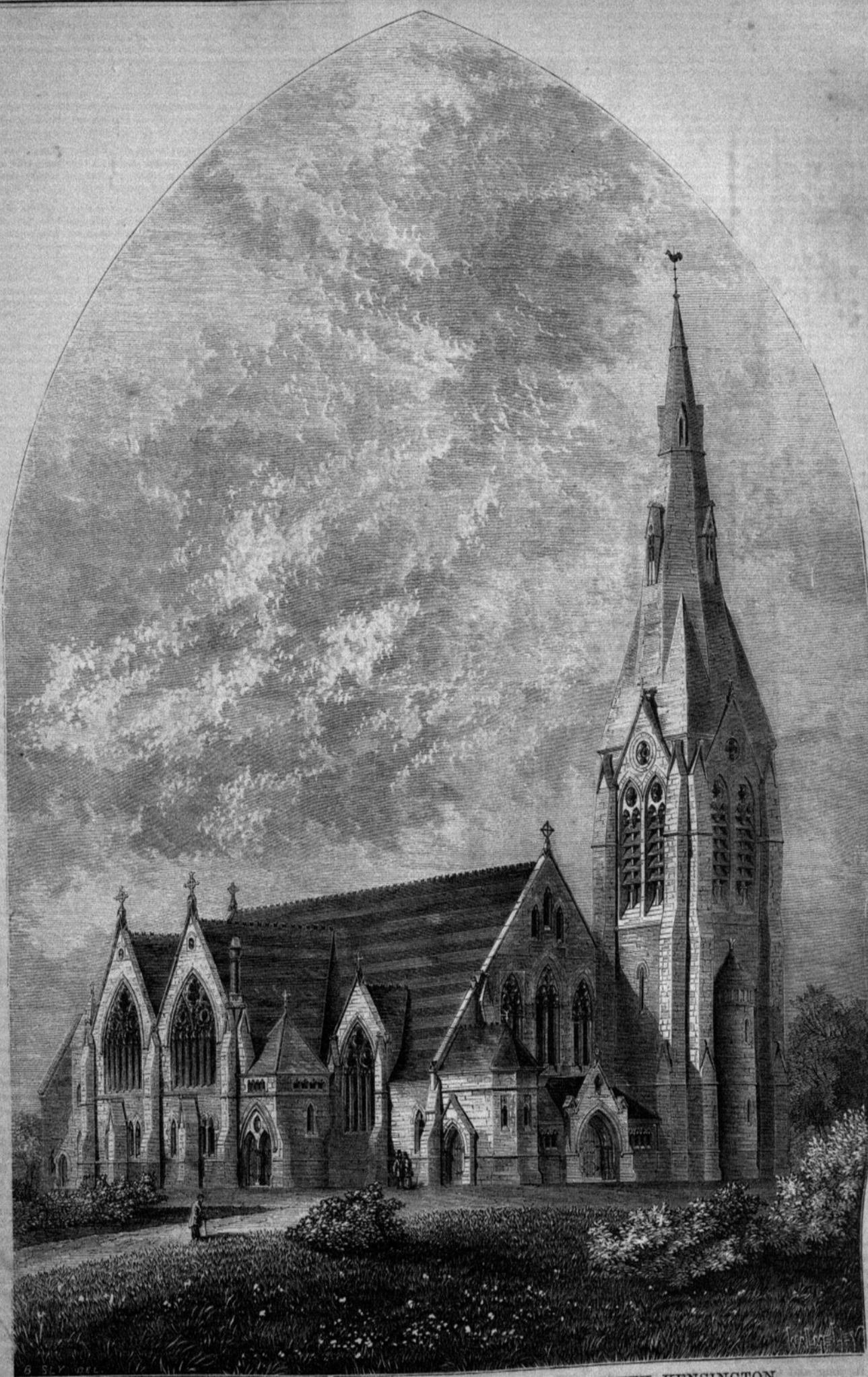
and a spacious organ-chamber open to the west and south, over the vestry. There are entrance-porches to the ground-floor and to the galleries at the west end, and next the transept at each side, as well as an enclosure to the main west entrance, a portion of this enclosure being used as a baptistery. The divisions between the nave, aisles, and transepts are formed with iron columns, 20 ft. in height, carrying brick and stone arches. The height to the underside of boarding under ridge of main roof is 54 ft. 6 in.

The interior will be faced with malms, with coloured bricks in strings and arches. The roofs will be open, stained and varnished; the seats of deal; the stalls in sub-chancel of oak. Both church and lecture-room are to be heated by means of Gurney stoves in chambers beneath the porches.

The exterior is being executed in Kentish rag, with Box Ground stone to doors, windows, water-tables, and strings. The church is estimated to accommodate, on the floor and in shallow galleries in the transept and at west end, about 1,600 persons; the amount of the contract, taken by Messrs. Myers & Sons, who are now proceeding rapidly with the works, is 11,300*l.*, which includes fitting up the lecture-room, but is exclusive of the

tower, pulpit, font, and organ. Messrs. George & Henry Godwin, of Brompton, are the architects. We give a view of the exterior from the north-west. The plan of the church is somewhat peculiar, and will have the effect of bringing a large proportion of the congregation into the neighbourhood of the officiating minister, a matter of some consequence in a building of this size. The promoter of the undertaking is the Rev. J. A. Aston, of Elvaston-place, South Kensington. The Rev. R. W. Forrest, of the Lock Chapel, is to be the first incumbent; and Mr. John D. Allcroft, of Porchester-terrace, is treasurer of the building fund. Subscriptions are being sought, and we believe that the priority in choice of sittings will be regulated according to the scale of donations. A site for a parsonage-house has been obtained in the dress-ground that will surround the church; and the building of this, under the direction of the same architects, will be commenced after the church is finished.

The road is called after Capt. Gunter's Yorkshire estate, and another, the Wetherby-road, after the name of his house and the town it adjoins. A fine neighbourhood will doubtless soon spring up around the new church.



ST. JUDE'S CHURCH, ON THE EARL'S COURT ESTATE, SOUTH KENSINGTON.
MESSRS. GEORGE & HENRY GODWIN, ARCHITECTS.

THE PROPER DRAINAGE OF TOWNS.

SIR,—As uncleanness of houses and streets, and the emission of noxious gases into the atmosphere thereof, are productive of disease and mortality, in proportion to the intensity of the uncleanness and the noxiousness of the gases, so whatever is done to prevent or reduce uncleanness, and the escape of foul gases into the air, tends to maintain the air in a pure state, and to prevent or reduce disease and mortality. This applies as well to ventilation as to drainage.

From the earliest times a wrong system has been pursued in regard to the drainage of our cities and towns; and, consequent upon our desire to remedy the evil handed down to us through our forefathers' ignorance of sanitary science, we have been endeavouring, during the last twenty years, to improve the drainage of the metropolis, as well as of towns throughout the country. But, unfortunately, by following too much in the old groove, the so-called improvements that have been effected are at best but confused and inefficient works.

All experience proves that the only true principle upon which cities and towns can be drained so as to preserve the subsoil, the atmosphere, and the natural streams from pollution, is that the rainfall should be kept separate from the sewage, and discharged into the rivers, and that the sewage should be kept separate from the rainfall, and used at a distance in the country for fertilising the land.

This principle, which the writer enunciated twenty-one years ago as the only true one to be adopted for town drainage, is fast fructifying. Persons who then denied its cogency now see that the old drainage works, as well as the drainage works which have recently been executed, are inefficient; that they are palliatives, and do not prevent the pollution of the subsoil, the air, and the streams; that, in fact, it is as great an error to admit filthy drainage into the drains and sewers that discharge surface water into the streams and rivers, as it was to retain excreta and liquid refuse in cesspools and cesspool-sewers at the back and front of the houses.

The difference between the noxiousness of an uncovered sewer, and of one that is covered, is only in degree. Both pollute the atmosphere by the gases which escape from the decomposing deposit and sewage currents, the one directly from the exposed surface, the other from the unexposed surface by the openings in the communicating drains. There are at least *two millions* and a half of inlets to the drains and sewers under the houses and streets of the metropolis. Each house and each street has its respective inlets; and through very many of these streams of foul gases are continually escaping into and polluting the stratum of air respired by the inhabitants. It is a fact that not only the filth that deposits in the drains and sewers, but the sewage itself while running in them, gives off offensive emanations. These, by escaping through the inlets into the houses and streets, do not produce specific disease, if they cannot fail to aggravate or intensify disease, or at least to lower the general tone of health.

Next, therefore, to open sewers and cesspools, the existing system of sewerage is the most effectual that could be devised for distributing the noxious sewage gases among the people. It may be likened to an enormous cullender which, while the liquid is passing down, the vapour beneath is passing up, and escaping into the air by the regurgitation. It is true that many of the inlets to the drains in the houses, and some in the streets, are trapped; but a vast number are not trapped, and through these, as well as through very many that are supposed to be trapped, the drains and the sewers are ventilated by currents of air constantly passing into, along, and out of them; that is, the pernicious gases generated in the drains and sewers are being continually forced out by the greater pressure of the cooler and heavier external air acting on the lesser pressure of the warmer and lighter internal air.

What has been done, in regard to flushing, trapping, putting down drains and sewers of improved forms, and intercepting the sewage from the Thames in front of London, and pouring it into the river again a few miles lower down, is not a thoroughly complete and permanent remedy, but the doctoring of an incurably vicious system. In truth, the combination of surface and house drainage into one set of drains and sewers discharging into the natural streams and the river is utterly incompatible with a sanitary atmosphere. This

public boards and the public should be taught to understand. The root of the evil—the cause of poisoned streams, the cause of poisoned air, the cause of smells, the cause of sickness, and the cause of high death-rates—is the mixing of the two kinds of drainage in one set of drains and sewers. So long as this is done, so long will it produce evil. It is an enemy that has never been subdued, and never can be, but by separating the two drainages.

Twenty years ago it was thought that the street refuse should be washed every morning, by the stand-pipe and hose, down the gullies into the sewers, and thence by flushing into the river. Persistence in this idea has done more than any thing else to perpetuate the combined system of drainage. The inherent fault of this system is, that it requires the sewers to be so large as to accommodate the rainfall, while they ought to be as small as possible, in order to concentrate the sewage (which is very much less in quantity) so as to give it scouring power to prevent the matter in suspension from depositing therein. They also, by exposing large surfaces of the sewage to the air, promote its decomposition, and the generation of noxious gases, which small pipes, receiving nothing but sewage, would do only to the extent of the surfaces exposed. Large-sized sewers therefore necessitate as auxiliaries large currents of water, to prevent the sewage from depositing, and also flushing appliances and men to remove the deposit. Hence these requirements in themselves prove in a measure that the combined system is wrong.

The idea of washing the street-refuse down the sewers looks well in theory, but would be very wrong in practice—first, because much of the heavy matters would deposit and cake on the sewer bottoms, making them wide and flat if they were not so already, which flushing without raking would not remove; and second, because the sewage currents, with the heavy matters carried by them into the reservoirs and the river, would not only pollute the river, but deposit on its sides and bed as well. All this is now in operation, except that the streets are not cleansed by the stand-pipe and hose. If they were so cleansed, they would keep so only until the traffic commenced, and would remain wet, not only for hours each day, but, when the atmosphere was very humid, for days together, which would be very objectionable. What now really takes place is this: the streets are left alone from two to six days and more at a time, when, if they are dry, the refuse is swept, and, if they are wet, the mud is scraped into heaps, and afterwards carted away. Practically, the streets are not cleansed until they become strewed, or entirely covered, with dirt or slop, when it is swept into heaps, and carted away. This is the normal condition of the main streets of traffic. This system of waiting for the dirt or slop to accumulate before it is swept up and removed is like the old practice of waiting for the sewage to deposit in the sewers until it choked the house-drains.

During the intervals of cleansing, in fine weather, clouds of triturated granite and horse-droppings are wafted into the houses, smothering everything, and into the eyes and mouths of the wayfarers, blinding and choking them; and in wet weather, sheets of greasy mud cover the streets, which the traffic scatters over the pavement, rendering walking on them, owing to the greasiness of the mud, a kind of retrograde progression; and over the passengers, covering their clothes, hands, and faces. When it rains heavily, rills of slimy liquid meander from the watersheds of the roads and footways into the gutters, whence the currents, gathering strength, sweep the sand and other matters down the gullies into the sewers and river, causing the mischief as before described. As this now takes place, the evil would be far greater, if the street refuse were to be washed every morning down the sewers as proposed.

The true use of sewers is to drain the surface of the rain falling upon it, and the land or subsoil of the rain-water percolating into it. The surface-water from the roofs, areas, and yards of the houses, and from the streets and roads, could be made, by careful scavenging (not the slow, slovenly way in which it is now intermittently performed), to flow off comparatively clean. Local boards and vestries should constantly employ men and boys, or the able-bodied poor, to sweep up and remove the dirt and mud as produced by the traffic, and the offensive matters as dropped by the horses. Receptacles should also be made near the gullies for intercepting the detritus when it rains, instead of

allowing it to be carried into the sewers, and thence, by the reservoirs, into the river. The receptacles should be cleaned out at least every other day,—not once a week, once a fortnight, once a month, or not at all, as now obtains.

But this work would be better done, and cheaper, by a well-organised body, to be called, "*The Metropolitan Street Cleansing Brigade*," consisting of about 2,000 steady, diligent men and lads to be employed every day (Sundays excepted) from morning till night in sweeping up and removing the dirt and horse-droppings in the streets. In some streets it would suffice to sweep them once, in others twice, and in others thrice a day, according to the traffic. In the main thoroughfares the sweeping should be continuous from morning till night. For instance, six men and six lads distributed along Oxford-street and High Holborn, from the Marble Arch to Holborn-bars, with a man, horse, and cart picking up the dirt, would keep that extent of main street, with the side streets, in a thoroughly clean condition. The thousands of tons of street refuse which now pass into the sewers and the river, could, by collecting it thus, be sent, at small cost, into the country by the railways, for the farmers to top-dress their land.

As by this system little or no dirt would be allowed to remain in the streets, so would there be but very little slop in wet weather, and but little dust in dry weather; and therefore fewer slop and water carts would be required. The saving by this, together with the saving by keeping the street debris out of the sewers and river, and the revenue that would probably be derived from the sale of the manure, would go far to pay the wages of the brigade. In any case, however, a small rate of one half-penny in the pound on all the property of the metropolis, would produce sufficient revenue to defray its expenses. In the event of a heavy fall of snow occurring, the brigade could be called out at once to remove it from the main streets, so that the traffic may not be impeded.

The existing system of house drains and sewers of the metropolis should be used only for carrying off the rain falling on the surface, and the water percolating into the land or subsoil; and the reservoirs at the outfalls should be used for precipitating the silt, sand, and rubbish that would be brought into them by the sewers when in flood, before the water is permitted to flow into the river. This would save the river from pollution and its bed from silting up, both of which now go on, and will continue to do so, entailing a large annual expenditure to remove the deposit, while the present system prevails. The deposit in the reservoirs could be spread on the adjacent marshes so as to raise the land to the level of the river embankments.

What is called the main drainage has produced no useful result, so far as London is concerned, beyond the removal of the sewage from the part of the river running through London. By making the outfall in another part of the river lower down, where the sewage still oscillates with the tides, the same mischief is going on as before. It was stated by the engineer who designed the work that "the flow of the sewage into the river at this part would not create a nuisance," and that "the sewage would not deposit in the river, because the heavier matters would deposit in the reservoirs, and the lighter portions would not precipitate when discharged into, and exposed to the action of, the tides." But these statements are not borne out by the results.

The sewage of cities and towns should be collected and carried away, so that the noxious gases generated by it should be discharged above the stratum of the atmosphere in which the people live and breathe. This could be done by laying down a system of main piping along the back or front of the houses separate from the surface water-sewers, with branch pipes laid to the kitchen and scullery sinks and the water-closets in the houses, separate from the surface water-drains. As these main and branch pipes would never be quite full of sewage, the space unoccupied by the sewage would be occupied by the gases emanating from the sewage. Hence, to prevent the effluvia from escaping into the houses, all the inlets should be provided with syphon pipes under them; and ventilating pipes, unconnected with the rain-pipes, should be continued from the sewage-pipes above the house-tops, and as far from the attic windows as possible, or connected with special ventilating shafts carried high in the air.

In the metropolis it would be neither difficult nor expensive to lay down a separate system of

sewage mains with branch pipes as proposed, as very many of the former could be laid along the existing sewers, and most of the latter into the houses by going just under the basement flooring, as the sewage-sinks and the water-closets are generally above the floor level.

Such a state of cleanliness of surface, and purity of air and of streams, would follow from the full adoption of the separate system, as are unknown and unattainable by the combined system. The only argument yet offered in favour of the latter method of drainage as against the former is, that while the latter requires only one set of drains and sewers, the former would require two sets, which would double the expense. A system, therefore, that poisons the air and the natural streams, is to be preferred, because it is cheap, to a system that would keep the air and the streams pure and sweet because it is dear. But it is not a fact that the separate system would cost much more than the other. In no fair argument based on reason and science, can the combined system be defended.

JOHN PHILLIPS.

THE NEW SURVEYOR-ASSISTANT.

In reply to Mr. B. Hope, who asked in the House of Commons if the First Commissioner of Works had created a new office of "Surveyor-Assistant of Works," Mr. Ayrton stated that the question of the hon. member was founded upon some misconception. No new office had been created, but, in consequence of the increase of duties thrown upon the Metropolitan Board of Works, it had become necessary to appoint an additional assistant-surveyor. He had divested himself of the patronage of the office, and had requested the subordinates in the department to appear before the Civil Service Commissioners for the purpose of ascertaining who was most fit for the vacant office. He was sorry to say that the Civil Service Commissioners did not report in favour of any one of the applicants. He then communicated with a society which was commonly supposed to represent the architectural profession; but the secretary replied that they had nothing to do with it. He therefore had advertised in the newspapers in the usual way, and a number of gentlemen had applied, who would go before the Civil Service Commissioners in order to ascertain which of them was most qualified for the office.

OFFICIAL ARCHITECTURE AND SPELLING.

SIR,—The applications for the post of Assistant-Surveyor of Works to Mr. Ayrton must apparently have been numerous, since it has proved justifiable, and of course "economical," to cause the official letter to be printed, a copy of which I inclose you herewith, and from which you will find that, while the "duties of the appointment are to design and superintend the execution of new buildings and additions to or alterations of existing buildings," the gifted Assistant-Surveyor "should also be capable of making technical reports properly composed and spelt." If such are to be the duties and qualifications of the Assistant-Surveyor, what may not be expected from the Surveyor—the full-blown official?

The whole document is so rich that you may perhaps see fit to print it *in extenso*, and thereby convey to all whom it may concern a summary of that class of "knowledge" which, we are told, "the candidates require." In all humility I should have fancied it was Mr. Ayrton who "required" the class of knowledge which it should be the function of his "Assistant-Surveyor" to place at his command.

Trusting the "reign of terror" in H.M.'s Office of Works, &c., may soon pass away, even although never to be forgotten, I am, Sir,

A SNAPPER-UP OF UNCONSIDERED TRIFLES.

P.S.—I should add that I have ventured to underline a few words not underlined in the original document.

"H.M. Office of Works, &c., London, S.W.
29th June, 1870.

SIR,—I am directed by the First Commissioner of Her Majesty's Works, &c., to acknowledge the receipt of your application in reference to the vacant appointment of Assistant-Surveyor of Works in this department, and I am to inform you that candidates for the office will be required to enter into a competition, which will be conducted by the Civil Service Commissioners.

The duties of the appointment are to design and superintend the execution of new buildings and additions to or alterations of existing buildings, and to superintend and

be responsible for the repair and maintenance of buildings. The candidates require a knowledge of the strength of all building materials, their nature, and the principles and methods of applying them to building purposes, the prices of materials and the value of labour upon them. They should understand architectural drawing, and how to make working plans and specifications, to take out quantities and estimate work to be done, the measurement of work executed, and abstracting and bringing it to bill in detail. They should also be capable of making technical reports properly composed and spelt.

The person to be selected must not be less than thirty years of age, nor more than forty. Due inquiries will be made as to his character and trustworthiness.

Candidates for the appointment should present themselves for examination at the offices of the Civil Service Commission, Cannon-row, Westminster, at ten o'clock a.m. on the 5th July proximo.

I am, Sir, your obedient servant,
(Signed) GEORGE RUSSELL, Secretary."

THE TRADES MOVEMENT.

Hartlepool.—In consequence of the decision of their masters to reduce the hours of weekly labour from 59 to 56 hours, the whole of the joiners employed by Messrs. Lander & Mellanby, as also those of Messrs. Thomas Walker & Co., two firms in the sawn timber trade at West Hartlepool, have carried out their threatened resolution to turn out, and their example has been followed by most of the joiners employed by Mr. J. Tasker and Mr. Brown, of Stockton, &c., in the same town.

Folkestone.—The carpenters and joiners of this town have been in agitation against a reduction of the weekly wages paid to them. For the last four years, some of them have been paid 5s. 6d. per day, and recently the 6d. had been struck off. The masters declined to give way, and the men accepted the 30s.

Arbitration Boards in the Building Trade.—The arbitration Board formed last year at Bristol, in connexion with the carpenters and joiners' branch of the trade, with the view of amicably settling any disputes that might arise, has proved of much use, according to the local Times. The umpire, Mr. Lewis Fry, gave it as his opinion that, although the questions which have come before it have not been of great difficulty or very general importance, the Board has been the means of promoting amicable feeling and preventing misunderstanding. The masters and men have lately held meetings to fill up vacancies in the Board.

Murderous Attack on a Non-Unionist.—An attack, by some of the notorious Sheffield savages, has been made upon a non-unionist, employed by Messrs. Newton, Chambers, & Co., Thorncliffe, near Sheffield. He was assailed by four men, kicked in a most brutal manner, and then thrown into a ditch. After this a large stone was dropped on his head, scalping him, and rendering him insensible. A fatal termination to his sufferings is considered inevitable.

MASTERS AND MEN IN LIVERPOOL.

An interesting case of arbitration was decided last week, in Liverpool, by the arbitrator, Mr. E. Whitley, ex-mayor, a gentleman deservedly esteemed. The award is just published.

A master cabinet-maker in the town employed a number of society men, and by rules agreed upon in 1866 three months' notice of any change in them was to be given on either side, and there was to be no piecework. The great hotel belonging to the London and North-Western Railway in Lime-street is approaching completion, and tenders for furnishing it have been requested from various tradesmen in the town. Mr. Abbott, the employer in question, called his men together to consult with them as to what prices ought to be charged for such work, for doing which the leaders of the society said he had violated the rules. During his absence from town, the foreman engaged a non-society man. The society men employed obstructed him, and refused to assist him up with his chest. On Mr. Abbott's return, he discharged the society men in a body, and engaged non-society men. Then followed the usual picketing and annoyance, and eventually it was submitted to arbitration. The award is:—

1. That the employer was justified in consulting his men. To hold the contrary would be productive of the greatest injury to both parties, in destroying confidence, and driving away trade.
2. The right to employ non-society men with society men cannot be denied. At the same time, and in the present case, the master had no right to require all his men to quit the society as a condition of remaining with him; and as compensation for their dismissal the arbitrator awards

the fourteen men 3l. each, to be paid them by their late employer, and each party to bear his own costs of the reference.

Standing out in pleasant contrast to the above, was the annual excursion of the firm of Haigh & Co., builders and contractors, of Liverpool, on Saturday last. About 200 workmen, with their wives, together with the heads of the firm, and a number of architects and others, who were invited guests, started from Lime-street by special train on a visit to the Duke of Devonshire's Palace at Chatsworth. Here, on arrival, they refreshed themselves, when they found the whole of the magnificent house and grounds thrown open for their inspection. The weather was delightfully fine, and the numerous tradesmen present had a fine opportunity of criticizing the various portions of the building and furniture, together with the paintings, sculpture, and books for which the place is celebrated. In the grounds a great number indulged in a dance to the music of a band of juveniles, which accompanied them from Liverpool. Towards evening, they were all got together on a sloping green sward, and a photograph was taken of the party. Then a speech was made by the head of the firm, Mr. Haigh, in which he alluded in highly complimentary terms to one of their foremen, Mr. Thomas Blair, and, on behalf of all present, he handed him a gold watch, chain, and appendages, of the value of 40l. The watch bears the inscription, "Presented, at Chatsworth, to Mr. Thomas Blair, foreman to Messrs. Haigh & Co., on their fourth annual excursion, by the firm, their workmen, and a few friends, as a token of respect and esteem, July 2nd, 1870."

STRIKE AT HOLLOWAY.

SIR,—Kindly insert in your next impression that the workmen employed at the stabling in erection for the London General Omnibus Company, Limited, did not strike against the contractors, but against the clerk of works, who has since been removed by the architect.

WILLIAM CROFT SELEY,
General Foreman on the Works
(For Messrs. Langmead & Way, Contractors).

HOUSE OF COMMONS.

Thames Embankment.—The Chancellor of the Exchequer declined, in answer to Mr. Beresford-Hope, to appropriate any portion of the Thames Embankment to the purposes of a natural history museum. Such an appropriation would deprive the ratepayers of a large portion of the land which was to be laid out as public gardens.

The Embankment at Chelsea.—Sir Charles Dilke asked the honourable member for Bath when the Metropolitan Board of Works will proceed with the Embankment of the Thames at Chelsea, pursuant to the Act passed in the last session of Parliament, and if it had yet been determined whether the Embankment should be faced with brick or granite. Sir William Tite replied that the Embankment referred to was a very large work, about a mile in length, and was intended to carry with it the main sewer. The whole cost would be about 250,000l. A Bill passed in 1858 authorising the construction of the work; but unluckily the clause authorising the Metropolitan Board of Works to borrow money for the purpose was struck out. The consequence was that they could not go on with the work. In July, 1869, however, a Bill was passed enabling the Metropolitan Board to borrow money, and as soon as that was obtained it was taken in hand, and some progress had already been made. Great difficulties had, however, been met with in the purchase of the property where the work was to be constructed, and in the adjustment of water rights along the river. As to the work itself, it would be faced with millstone grit, so that there would be a stone wall facing the river instead of brick. He hoped that before the expiration of two years the work would be thoroughly completed.

New Refreshment Rooms for the House.—Mr. Ayrton promised Mr. Bentinck that as soon as the committee appointed to improve the internal arrangements of the House could come to terms with the Black Rod Committee of the House of Lords, a plan which he (Mr. Ayrton) had submitted to the former committee, would be carried out, and the new refreshment rooms erected. The carrying out of the recommendations of the committee of last session would have entailed an expense of 24,000l. The plan now before the committee had been prepared by an officer of the department of works.

by the local authorities.

The New Home and Colonial Offices and Parliament-street.—In reply to questions, Mr. Ayrton said, the building of the new Home and Colonial Offices would be proceeded with as soon as the Government had given the necessary sanction to the plan. The decision did not rest with him. The plan and estimates were now under consideration, and he expected that a decision would be come to in a very few days. With respect to the progress in purchasing the houses, for which the sanction of Parliament had been given, it was not for the purpose of improving Parliament-street, a duty which must be left to local authority. The houses were to be purchased for the site of the Home and Colonial offices. They would not be pulled down till the actual necessity arose.

At Wellclose-square, in the east of London, new schools for the children of seamen and others, in connexion with St. Paul's Church, Dock-street, Whitechapel, were opened by the Prince and Princess of Wales, on the 30th ult. The schools occupy the centre of the square. The site was, until lately, for nearly 200 years, occupied by the church for Danish seamen, and was the property of the crown of Denmark. The cost of building is 4,800*l.*, and fittings and other charges about 600*l.*, making the total 5,400*l.* The contributions received or promised from the public in aid of this work amount to 3,400*l.*

METROPOLITAN APPROACHES,—LAW
COURTS AND NORTH.

I would start from the Embankment, taking down Strand-lane (chiefly brothels), leaving King's College-buildings to form the western line of the new street; St. Mary's Church and Newcastle-street (wide) would face the opening thus made. At the upper end of this street I would cut through the fork made by the junction of Houghton-street and Stanhope-street, through Clare Market, Duke-street (skirting the Roman Catholic Chapel, but not infringing upon it), the stables and back slums, at the rear of the western side of Lincoln's-inn-fields, into Great Queen-street, facing Little Queen-street.

It is rumoured in the neighbourhood that the

I will leave the estimate of cost to a more skilled man; but I cannot but think that the cutting through Gate-street and High Holborn, to form a curve to Southampton-row, would be found much more expensive than the line I have suggested, and certainly would not be so direct from north to south. The only difficulty that I can see, and which would apply to both plans, is whether the Duke of Bedford could be induced to remove the bar or gate in Upper Woburn-place.

E. B.

SIR,—Permit me to bring under your notice what I conceive to be an anomaly in the administration of justice in certain cases under the Local Government Acts, and having special reference to builders as a class.

I do not for one moment wish it to be inferred that the prosecutions are unnecessary, or the decisions unfair. I do not complain of individuals, but of the system under which such a state of things can exist, and which tends to frustrate the objects aimed at by the Health of Towns Acts by provoking evasions of the law.

BARNES'S HOME, HEATON.

The school will be carried on in connexion with the Ardwick Industrial Schools, and will be capable of accommodating 200 children. Mr. Robert Barnes, who has long been a friend of the Ardwick Schools, has undertaken to bear the whole expense of building and furnishing the new schools and the purchase of a few acres of land adjoining, which will be made use of for gardening and farming purposes. The total cost will be about 12,000*l*. The new schools will be erected on an elevated plot of land on the Bank Hall estate. It will be in the Gothic style. The total frontage will be 196 ft., and the depth 242 ft. The central part of the building will be three stories high, with side wings two stories high, built of brick with stone dressing. The principal feature in the front elevation of the central part of the building is a tower with chamber for the reception of a clock having a dial on four sides, surmounted with a slated spire, the total height of which will be 111 ft. The principal entrance will be under the clock-tower, leading to a hall, thence to a corridor running right and left the full length of the building. There will be accommodation for 200 boys, with resident masters, assistants, servants, and residence for the governor and matron. The ground

In 1858 the cast-iron pipes carrying the Coochituate water from Boston to South Boston, were treated with a preparation from coal tar, known as Dr. Smith's process, and the result has been so favourable, according to the *Scientific American*, that it has been permanently adopted by the Coochituate Water Board, and by the managers of other waterworks throughout the States, where the material used for pipe is cast-iron. The pipes laid in 1858 were taken up and examined after ten years' use, and were found nearly free from rust or ocherous accretions. The varnish or pitch is made from coal tar, distilled until all the naphtha is removed, the material deodorized, and the pitch reduced to about the consistency of wax or very thick molasses. The pitch must be heated to 300 deg. Fah. during the dipping. Fresh pitch must be frequently added, and at least 8 per cent. of heavy linseed oil with the pitch. Each casting is kept immersed from thirty to forty-five minutes, or until it attains the temperature of 300 deg. Fah. The coating must be tenacious when cold, and not brittle, nor disposed to scale off.

Six.—One leisure day I resolved to explore the Southern Embankment. I passed the magnificent hospital (or rather half a dozen linked), and found the Embankment terminate in a miserable cow-shed, and there end in smoke from a number of conical craters,—i.e., pot-tery volcanoes belching forth volumes of sulphurous vapour, enough to choke a black. There are some eligible sites to let for bacon-smokers, haddock-dryers, blacking-makers, or for a sweeps' asylum. Gas-works seem to thrive here,—three on this side and two on the opposite shore. The South-Western Railway runs through the gas-works over the retorts, and *within a few feet* of the huge gasometers. If trains halt here, passengers get it hot and strong, and must not make light of it. Next to one gas-yard I observed a firework manufactory cheek by jowl, also a glass-blower's fiery-furnace shaft within a few feet of receivers. In this odouriferous region, soap-boilers, candle-makers, bone-crushers, manure-dealers, varnish-burners, and chemical works abound. It is well St. Thomas's Hospital is near; the poisoned poor will not have far to stagger. The hospital governors seem to anticipate hosts of patients by the number and extent of noble buildings. While commending their institution and intentions, may their expectations be not realised.

SIR,—I am very glad to see the subject of free public libraries so ably urged by my fellow craftsman, a lord of the linen apron, "Jack Plane." It is constantly said, and with truth, that the metropolis of this kingdom lags behind even third or fourth rate towns in the adoption of any improvement. Why this is so, is somewhat difficult to prove; but it is, I think, likely to remain so until the great unwieldy aggregation shall be resolved into manageable sections, in which the individual shall not be lost in the multitude as now, but shall feel, as a soldier in a great army feels, that his services and abilities are necessary to the successful advancement of the whole. When such a time comes, we shall have free public libraries in London supported by the rate-payers, but, in my opinion, not till then. Let no one hope, however, to get the assistance of the shopkeeping class as a body towards such an object. Evidence is not wanting that they have

out-voted in many places those whose minds have been bent upon their establishment. The opposition is in every case made by that class, while all others cheerfully support the proposition. Nor do they partake of the feast even when it is provided for them. During the last two years my lot has been cast in Liverpool. I have been a constant reader at the Free Public Library there, and I confidently affirm that if readers of all other classes were excluded, the benches would be empty.

Let not my brothers in London lose heart, however: rather let them "Pray, that come it may, as 'come it will, for a' that," and show to the obstructors in an unmistakable manner that they abundantly employ the means they now possess for their intellectual and moral elevation, so shall they be better able to appreciate the boon when it comes.

E. G.

THE LIGHT AND AIR QUESTION.

ADAMSON & GATTY.

THE plaintiffs in this case (before Vice-Chancellor Sir W. M. James), Messrs. Adamson & Waugh, were owners, as joint tenants, of a large warehouse at the corner of York-street and Velvet-street, Manchester, and the bill was filed against Mr. Gatty, the owner of a neighbouring warehouse, for an injunction to restrain him from erecting a warehouse or building upon his premises in such a manner as to darken or obstruct the free access of light to the windows of the plaintiffs' warehouse, as such access was enjoyed previously to the taking down of the buildings and erections which formerly stood on the defendant's ground opposite to the plaintiff's warehouse.

The evidence went on to show that the former building on the defendant's ground was 36 ft. high, and 60 ft. away from the plaintiffs' premises, whereas the new building was about 65 ft. high and only 40 ft. away from the plaintiffs' warehouse. It was contended that the plaintiffs had a right to the same amount of light which they had always enjoyed.

The Vice-Chancellor said he entirely dissented from the theory that the plaintiffs had a right to the exact amount of light which had always come to their premises, as if they had an absolute property in the light. The plaintiffs' right to light was an easement over his neighbour's property for the enjoyment of his own house, but this court would not interfere on behalf of this right, except where a court of law would give substantial damages for the injury sustained. It was necessary for the plaintiffs to show that there was a deprivation of and an interference with his enjoyment of his house. Suppose a man had a coal-cellar, and half the light was taken away by an adjoining building, still there would be no ground for complaint if there was sufficient light left for the uses to which the cellar was applied. There must be a substantial interference with the plaintiffs' enjoyment. In this case, it appeared from the evidence, that the table on which the plaintiff exhibited his goods received as much light now as it did before, and there was no evidence to show that the rest of the room was rendered unfit for the purposes to which it was applied, which seemed to be the storing of the goods. Under these circumstances he should not interfere to prevent the defendant from continuing the erection of his building; but there might be a case, when the building was completed, for compensation. He should, therefore, refuse the injunction, and the plaintiffs could apply at a later period if they could prove substantial injury.

ARCHITECTS' CHARGES.

AN action, Farrall v. Vincent, to recover 39*l.* 17*s.*, balance of account for plans and superintending buildings at Sherborne, has been tried at the Somerset County Court, Yeovil. Plaintiff is Mr. C. E. Farrall, late of Sherborne, architect and surveyor; and the defendant is Mr. J. Vincent, innkeeper, of that place.

Plaintiff said he was first requested by the defendant to make a plan of a cottage, for which he charged 1*l.* 1*s.* He also prepared a plan of a new house for defendant, to be laid before the Board of Health; but, as defendant could not come to terms with them for the land that would be given up, he was requested to make more plans. The agreement was that he was to have 5 per cent. upon the outlay, which was to include his charge for drawings and superintendence. When the work had progressed as far as the arches of the first-floor windows, there was an arrangement with Mr. Digby's agents that the building should be put back, so as to improve the appearance of the entrance to the town from the railway station. Defendant asked him to let him know the amount of his account. He sent in a bill for 2*l.* 3*s.* per cent. on the amount of the contract, as that was the usual charge for preparing the drawings, and charged 1*l.* a week for the time he had superintended the building,—seven weeks. No objection was made to his charges. He was then requested to prepare a revised plan for the building, and it had since been erected in accordance with that plan by Messrs. Caines & Croad, of Sherborne, builders. His present claim was 39*l.* 17*s.*, but that included money paid for stamps and other things. He did not know how defendant arrived at the amount paid into court (11*l.* 10*s.*). His valuation had never been objected to, nor did he know that the account had been settled since he left Sherborne. He had received 50*l.* on account, in addition to the amount now claimed.

Mr. George R. Crickmay, architect and surveyor, Weymouth, as a witness for plaintiff, said the charges were less than usual. The charges on the various plans were referred to at some length.

Mr. C. E. Beeson, architect and surveyor, Yeovil, said the charges made in plaintiff's bill were very reasonable. He considered that plaintiff was perfectly justified in

charging for the time occupied in superintending the work (as he had to be present all day, in consequence of the erection on old foundations), which was afterwards stopped, instead of simply charging 2*l.* per cent. on the amount expended. The first part of the work was the most important, and required the most careful supervision.

Mr. Thomas Farrall, architect and surveyor, Sherborne, said he considered that his brother was perfectly justified in charging for the time he expended in superintending the building, as the foundations required unusual attention.

Mr. George Croad, builder, said defendant asked him, last week, to take 160*l.* to settle his claim for 34*l.* He had since received 100*l.* in notes and a bill for 105*l.* He did not know how defendant arrived at the amount offered; but he believed he had consulted Mr. Chant, builder, Yeovil. There was a forfeit of about 60*l.* on the contract, as the work was not finished at the proper time. He took this into account; and, as defendant threatened to let the matter go to the assizes, he took the amount offered, in order to get a settlement. Mr. Farrall was at the building nearly all day long during the erection of the first house on the old foundation.

Mr. Caines gave similar evidence.

For defendant, Mr. Joseph K. Chant, builder and surveyor, Yeovil, said he considered the charges rather high. It was an extraordinary thing for an architect to charge for time and to act as clerk of the works. He thought 5 per cent. ample payment for plaintiff's trouble.

Plaintiff produced a letter, in which defendant had admitted several items of the account, and promised payment.

The Judge allowed 5*l.* as a sufficient sum for superintending the work, and deducted 15*s.* from the charges for preparing plans. Judgment for 37*l.* 2*s.* and costs.

CATHEDRAL ORGANS.

SIR,—I quite agree with the objection made to cutting up Salisbury organ. With reference to your comment, it is one thing to divide an ordinary parish-church organ into two halves (in All Saints', Liverpool, that was done in order to get a "Decani & Cantoris" organ to play antiphonally with the choir), but it is another thing to split up a great organ such as they are now placing in our cathedrals into several parts, and plant them up and down the place in the way Mr. Scott proposes, as far as I understand him. If you were sitting in one of the stalls in a cathedral, it would not improve your devotions to find a big pedal-pipe suddenly exploding close behind you, and then to hear the next note some 30 ft. off, opposite you, and the treble-pipes at the same time singing out from the triforium! It would not do, I assure you; and if I were organist at a cathedral, I would raise heaven and earth before I would let my organ be treated so.

S.

TENDERS.

SIR,—The following will interest a great many of your readers, as showing one of the causes of the wide tenders often seen in builders' contracts. I, with six others, was asked to give a price for house, stable, and greenhouse, a few miles from town; lithographed quantities being supplied to each of us, and at the appointed time the party (called in your list of tenders an architect) opened the different estimates, when they showed a difference of 220*l.* in about 1,600*l.* The estimate of the lowest but one was accepted, since which it has turned out that the accepted one and another were selected as the desirable parties to have the job; and their lithographed quantities showed 22 rods; but the other four of us were very kindly treated to 32 rods. I should be glad if you would state at the bottom of this letter, in your next issue, whether there is any way in which the parties could be made to pay for our wasted energy and for their dishonourable conduct to all concerned, besides exposing them to scorn.

ONE OF THE FOUR.

. Surely our correspondent must be in error. The transaction seems so stupid, as well as wrong. Have the quantities since been checked?—Ed.

SAFE!

A PLEASANT word that;—the certainty of it worth any money: a dangerous word when belief in it is entertained without good grounds. Safes that are unsafe are common enough; safes that really are safe are much less so. Mr. Streeter, of Conduit-street, has done his best to obtain one that is safe; and Messrs. Chatwood, who erected it, have guaranteed, under a heavy penalty, that by no portable appliance can an opening large enough to give admission, be operated in either side of their safe in less than forty-eight hours; in front in not less than a week; and the concrete would take at least some twenty-four hours to work through. So that a burglar would have to be at work at the weakest point seventy-two hours, unobserved, before entrance was possible. The size of the safe is remarkable, the length being 15 ft., width 9 ft., height 9 ft. 6 in., and the door is 18 in. in thickness. The safe is not only securely bedded in concrete, and so built into the premises as to be proof against a long amount of burglars' labours, but the whole is enclosed in a cistern of pneumatic chambers, the air in which presses upon and sustains a column of coloured water in a gauge-tube placed outside in full view. This envelope, which is the invention of Mr. Tobin, well known

in connexion with the Polytechnic Institution, gives warning of any operations in progress, and affords the means of detecting the precise portion under attack. The total weight of the safe is more than 50 tons. We are disposed to think Mr. Streeter may say—Safe!

GLASS WALLS.

AMONG the novelties in garden arrangements Mr. Beard, of Bury St. Edmunds, has recently patented a system of erecting walls of glass. These walls are formed of grooved T iron. Stands of the required height, are fixed at four or five feet apart into a foundation of brickwork, stone, or blocks of wood, and bound together at the top by a coping which projects 3 in. on each side. Into the grooves rough plate glass is placed, being held in position by a packing of felt, the slabs being butt-jointed; and thus, when the coping is put on, the work is complete. Nothing can be more simple than the arrangement and construction of these walls, and they are unexceptionable in point of appearance. They are open to objections, but may be useful under some circumstances.

CHURCH-BUILDING NEWS.

Maidenhead.—The dedication of the tower of St. Luke's Church, Maidenhead, has taken place. The completion of this spacious church, which was consecrated by the present Bishop of Winchester (then Bishop of Oxford) on Thursday, August 23rd, 1866, was thus appropriately consummated. The church is built in the Early English style of architecture, the material being freestone, from Charlbury, Oxfordshire. The dressing is of Box-ground Bath stone on the exterior, and Corsham Down stone in the interior. Mr. G. R. Clarke, of London, is the architect, and Mr. Griffiths, of Eldersfield, Worcester, the builder. The entire cost has been 3,500*l.* The tower is built to correspond with the church in the style of the thirteenth century. It consists of a ground floor open to the church, a ringing-loft, clock-stage, and belfry. The latter has two lancet lights, with louvres on each of the four sides, and is surmounted by an enriched and corbelled cornice, and a pointed slate roof similar to those frequently seen in Normandy and other parts of France. The contract was 1,200*l.*, and has been carried out by Mr. Price, of Maidenhead.

Lydeard St. Lawrence.—The work of church restoration in Somersetshire has remarkably progressed of late. The parish church of Lydeard St. Lawrence (a village about seven or eight miles from Taunton) has been styled in past times the "cathedral of West Somerset;" and its restoration and reparation may therefore be considered as of considerable importance. The restoration was commenced in September, 1869, from designs by Mr. E. C. Giles, architect, London; a contract of 1,160*l.* being taken by Mr. S. Shewbrooks, builder, Taunton. This amount, however, has been exceeded in consequence of new roofs being required instead of repairs to the old, and the sum at present expended is 1,400*l.* The new roofs are of open deal timbers stained, and covered with slate; the floors and benches throughout the church are also new, and the abolition of the ancient high square box-pews has materially increased the sitting accommodation. A gallery, which blocked up the western window and hid the arch of the tower, has also been removed. The arcade dividing the nave and north aisle having been thrust out of upright by the weight of the old roofs, has been taken down and rebuilt. The parapets and other masonry on the exterior of the church have been repaired. The pillars have been cleaned of limewash, and the walls fresh plastered a dark stone colour. The stone tracery of the windows is being restored, and glazed in diamond-shaped panes of cathedral-tinted glass. In the body of the church most of the old carved oak bench-ends and some framing which is also carved have been preserved and re-used; the new seats and framing being constructed of deal and oak. The chancel floor is laid with encaustic tiles. There are several important items of restoration which cannot be carried until a further sum of 400*l.* or 500*l.* be raised. Chief of these is the tower, at present covered with a coating of rough-cast, which it is desired to remove and properly point the stonework; and the belfry is also in a dangerous state. One of the bells fell down about

twelve months ago and was smashed. The two porches—which form a distinctive feature of the building—require repairs. The design also included the building of a new vestry on the south side of the chancel.

Middlesbro'.—The foundation-stone of a new church, to be erected in Middlesbro', from plans by Messrs. Austin & Johnson, of Newcastle, has been laid. The site is in Newport-road, and the edifice, estimated to cost 5,500*l.*, will have accommodation for 500 persons.

Camberwell, Surrey.—A new church (St. James's) has been erected in the Knatchbull-road, at Camberwell, and was consecrated by the Bishop of Winchester on the 27th June. The style of the church is the Geometrical. The walling is of Kentish rag dropped coursed work, with quoins, windows, and decorations of Bath stone. The church consists of a nave, 50 ft. high, to ridge of roof, 30 ft. in width, and 88 ft. in length; north and south aisles, 15 ft. wide, and small north and south transepts. The vestry on the south side of the chancel is large, being intended for meetings and classes, and the organ-chamber on the north side is of similar dimensions. The chancel is 24 ft. in width and 30 ft. in length, with an apsidal termination, and is lighted by five two-light traceried windows. The nave arcade is composed of five moulded arches, carried on circular stone shafts, and the clearstory consists of a series of circular windows, filled in with tracery. The roofs are of deal throughout, left in its natural state. The chancel and passages of the church are paved with tiles. The font and pulpit are both of Caen stone, the latter being richly carved. The tower, 65 ft. high, is surmounted by a spire, 75 ft. high, of wrought Bath stone. It stands on the north side of the church, and is built against the aisle wall, the lower part being used as a porch. The church is designed to accommodate 780 persons on the floor, exclusive of chancel. The building is lighted by standards, 12 ft. high, placed in the centre of each of the nave arches, and in the transept and chancel. The church has been built, and the whole cost thereof borne, by Mr. James L. Minet; the builders were Messrs. Dove Brothers, of Islington; and the architect Mr. George Low, of Basinghall-street. The hot-water apparatus was by Mr. T. Wontner Smith; the carving, well executed, by Herley & Abbey; the gas-lighting by Mr. Cowan; and the organ by Messrs. Walker & Sons. The entire cost of the building was about 7,500*l.*

Surrey-square, Old Kent-road.—The church of All Saints, Newington, was destroyed by fire on the 27th of April, 1869. The cause of the fire was never ascertained. It has now been restored in its former style; and, through liberal donations, the tower and spire have been completed as originally contemplated. The vestry has been considerably enlarged, and an organ has been erected by Messrs. Bevington & Son. The church is in the Decorated style, and consists of a nave, north and south aisles, chancel (at the side aisles for organ and vestry or robing-room), tower, and lofty spire, at the west end of the north aisle. The lower portion of the tower forms the principal entrance. The nave is 80 ft. long, 33 ft. wide, and 48 ft. high, lighted by seven clearstory windows. The north and south aisles are 13 ft. wide; the chancel is 32 ft. deep, 22 ft. wide, and 39 ft. high; the tower and spire are 116 ft. high. Mr. Downs was the builder, and Mr. R. Parris the architect. The cost of rebuilding, including the spire and fittings, has been 4,900*l.* towards which about 4,700*l.* have been obtained from insurance and subscriptions. A wall to enclose the site is said to be needed; this, it is estimated, will cost 500*l.*, so that 700*l.* are still required to complete the restoration. The church contains 800 sittings, all of which are free and unappropriated. The district has a population of 8,000 persons, who are generally poor. The edifice has been consecrated and opened for divine service.

Cradley, near Great Malvern.—Last year Cradley Church chancel was rebuilt by the rector, at a cost of over 1,000*l.* That part of the work was done under the direction of Mr. Scott, of London, the new work being in the Decorated style. Following the example, the neighbouring gentry, parishioners, and friends resolved to take the nave in hand. Mr. Perkins was engaged as architect, and Messrs. Collins & Cullis, of Tewkesbury, were the builders. The church was at that time a mere oblong, consisting of chancel, nave, and western tower, without aisles or chapel. The structure is of unusual dimensions, the nave alone being 80 ft. long. It was determined to rebuild the nave, and to

add a new aisle on its north side. This has been done, and six arches now separate the new aisle from the nave, the arches being supported by pillars with moulded caps. The new work is in the Decorated style, and the old windows of that period, as also old materials, have been made available. A roof of timber has been placed on the nave—a tie-beam roof, on the Decorated principle. The only demarcation between the nave and the chancel is the elevation of the nave roof a little above that of the chancel, and there is also a screen of open timber work, with an arch above of the same material. The old south doorway is of Norman work; and a new porch has been added to the north side. This porch is of stone, and is connected with the hot-air chamber (which is partly underground) for warming the church, on Haden's hot-air principle. Sandstone from Ombersley has been used in this restoration, with also some Cradley stone. The total cost was about 2,000*l.* The number of sittings in the church has now been increased to 400. The family of the late Mr. Webb, of Cradley, propose to place a stained-glass window to his memory in the east end of the chancel. Mr. Yapp, of the Halesend, has undertaken to erect at his sole expense a porch on the south side of the church. The edifice has been re-opened.

Lincoln.—The new church of St. Peter and St. Margaret, which has been just completed in Eastgate by Messrs. Otter & Binns, of Lincoln, from designs by Mr. Arthur W. Blomfield, architect, has been consecrated. The edifice contains sitting accommodation for 500 persons. It consists of a nave and north aisle, chancel, organ-chamber, and vestry, with south-west porches, a wagon-headed roof to the chancel, and seats of stained pine. The style is First Pointed, of a simple character. The interior is lighted by three large windows on the south side, two at the west end of the nave, and a stained-glass window at the east end. This window, which is of the Early English period of architecture, contains, on a ruby ground, seven subjects in the three main lights, namely, "The triumphal Entry into Jerusalem," "The Betrayal," "The Lord's Supper," "The Crucifixion," "The Entombment," "The Resurrection," and "The Ascension." The three circular and foliated openings above contain the emblems, the double and interlaced triangle, the Lamb and Banner, and the Dove. The glass was done by Messrs. Ward & Hughes. The edifice is built of Lincoln stone, rock-faced, with dressings of Bath stone; the interior walls plastered, with Bath stone quoins and dressings. A hot-water apparatus in a chamber beneath the vestry supplies warmth. The reredos is of mosaic decoration. The contract for the building, exclusive of the reredos and east window, which are private gifts, is within the architect's estimate of 2,500*l.*

Books Received.

Fraser's Magazine for July contains papers on "The Water we should not Drink," signed W. M. Higgins; on "Telegraph Time"; on the "Greatest Sea Wave ever known," signed R. A. Proctor; on the "Science of Religion," by Professor Max Müller; and various other interesting papers. In that on Water the researches of Dr. Frankland, Dr. Angus Smith, and others, are translated into household phrase for unscientific readers. The *modus operandi* of telegraph time at Greenwich is explained in the paper on Telegraph Time. The sea wave spoken of by Mr. Proctor is that of 1868. — "The Railway Problem, 1870: a Series of Papers edited by Major-General John Hill, Royal Artillery. London: Hicks & Co." In this series of papers the power of railways and their evils, how to make railways pay, railway reform, railway management, their acquisition gratis by the State, the railways of the future, and the railway league, are all separately treated of. In the paper on the railways of the future, the extension of branchlets on the little Festiniog railway scale, and the easy conversion of light railway trucks into road vans by a method of changing wheels, are treated of. — "Board of Works for the Westminster District: Report of the Street-cleansing and Sanitary Committee on the Lighting of the District. Metchim, Parliament-street." In this report the better lighting by gas of such places as Whitehall, Parliament-street, the Broad Sanctuary, Victoria-street, Kensington-road, and Exhibition-road is rightly recommended.

Miscellaneous.

Archaeological Tour.—A number of members of the Durham and Northumberland Architectural and Archaeological Society have been on a tour through a portion of their district, which is well known to be rich in antiquarian remains. The party, among whom were Dr. Bruce and Canon Greenwell, went to Low Row Station from Newcastle, and were met there by Mr. Chas. Ferguson and others from Carlisle, who conducted them to Naworth Castle, the *entree* of which had been granted by the proprietor. Having, under the guidance of Mr. George Howard, inspected the objects of interest with which the castle abounds, the company were entertained with a paper by Mr. Ferguson, giving an historical and descriptive account of the ancient fortress. From thence they proceeded to Lanercost Abbey, the history and architectural features of which were explained in a paper read by Mr. C. Ferguson, and the joint production of that gentleman and his brother, Mr. R. Ferguson. The company then drove to the Roman encampment, Birdoswald, the history and leading features of which were explained by Dr. Bruce, and from thence to Gileland, where most of them remained for the night. Next day portions of the Roman wall in the same neighbourhood were to be visited, under the guidance of Dr. Bruce.

Social Science Association.—The arrangements for the congress, to be held in Newcastle next September, are proceeding very favourably. Great interest in its success is manifested by the leading inhabitants of the town. Amongst the special questions to be discussed in the various sections are these:—Education Department—1. The education of miners' children; 2. Amalgamation of schools; 3. Grading of schools so as to place the highest education within the reach of the greatest number; 4. Education in science. These subjects are provisional, on the Education Bill passing. Health Department—1. What is the best method of disposing of sewage and animal excreta? 2. What modifications are desirable in the existing sanitary laws and administration with a view to make them compulsory instead of permissive? 3. What legislative measures ought to be taken to remedy the adulteration of food? Economy of Trade Department—1. Partnerships of industry. 2. Is it desirable that the railways should become the property of the State? 3. Merchant Shipping Code. 4. By what means may a better distribution of labour in England be effected? 5. Courts of arbitration between employers and employed. 6. Colonisation as a part of the policy of the State.

Railway under Carnarvon Castle.—The London and North-Western Railway Company have added another link to their system by connecting the Carnarvon line with the Cambrian and Llanberis railways, thus opening up for railway traffic the Welsh slate quarries, and completing a direct communication with the Great Western system in South Wales. This junction has been effected by making a line directly through the ancient borough of Carnarvon. Mr. Baker, engineer of the London and North-Western Railway Company, has done this in a very complete manner, but antiquaries who have learned to reverence the birth-place of the first Prince of Wales will probably be shocked to learn that the difficulties of the undertaking were such that the engineer has been compelled to drive shafts through the shale rock upon which the foundations of Carnarvon Castle stand. The works, though only one mile and a half in extent, are very heavy throughout, and where not tunnelled have retaining walls 10 ft. thick and 50 ft. high. The completion of the connexion was celebrated on Tuesday.

The Working Men's Club Union.—The dramatic performance at St. George's Hall, by Sir Charles Young and other amateurs, ladies as well as gentlemen, which was recently postponed in consequence of serious illness in the families of two of the company, will positively take place on Wednesday, the 13th inst. Mrs. Hermann Vezin has kindly undertaken to play *Lady Montreville*, in Lord Lytton's drama of "The Rightful Heir." The performance is on behalf of the funds of a society which is doing much towards ameliorating the habits and promoting the interests of the working classes of this country—"The Working Men's Club and Institute Union."

Window Gardening.—The annual show of the Society for Promoting Window Gardening has been held in Great Dean's-yard, Westminster. The operations of this society extend over the united parishes of St. Margaret and St. John, Westminster, and from this district, with its narrow streets and close courts, was collected a large number of plants—fuchsias, geraniums, and others; the first-named being the most numerous. General prizes were awarded in two classes:—1st, to working men or women for fuchsias, for geraniums, and for other plants; 2nd, to children in parochial, national, infant, Sunday, and ragged schools for the same divisions. The prizes consisted of medals and money. Besides these there were local prizes appropriated to each district, and in this division a third class was added, namely, the parish work-houses. Some exhibitors had chosen plants of an unusual character for window gardening: one exhibited a plant of ivy trained into a scroll pattern; another sent a Virginian creeper; a third had cultivated a large green bulbous-rooted plant with broad leaves and a spike of green flowers, more curious than beautiful. It is notable that only one sent a rose. On the whole, however, the display was considered to be much superior to those of former years. The Earl of Shaftesbury distributed the prizes.

Gloucester Cathedral.—Some months ago the Freemasons of Gloucestershire expressed a wish to undertake the restoration of some distinct portion of the Gloucester Cathedral, and it was suggested that they should provide the new reredos, at a cost then estimated at 600*l*. A committee was appointed by the Provincial Grand Lodge; the 600*l*. were raised; and at a recent meeting it was ordered that a communication should be made to the dean to the effect that "the Freemasons are prepared with the 600*l*., the amount which they were led to believe the restoration of the reredos would cost, and are most anxious to undertake that work; but that the committee do not believe it possible to obtain a larger subscription." The cost of the reredos, as designed by Mr. Gilbert Scott, is expected to be about 2,000*l*.

New Streets in connexion with the Holborn Viaduct.—A new street in connexion with the Holborn Viaduct has been opened for traffic. It runs from St. Sepulchre's Church on the Viaduct, and over the London, Chatham, and Dover Railway into the Farringdon-road. The entire length of this street is about 600 ft., with a carriage-way of 30 ft., and two footways of 10 ft. each: the gradient is 1 in 45. Another new street which is in course of formation from the Holborn-circus to Fleet-street, and the footway on that part of the eastern portion of it leading from Holborn-circus to Shoe-lane, has also been opened to the public. The width of this street and of the pavements will be the same as in the other case.

A Big Nuisance.—The *Rock* says an architect has issued a pamphlet, in which he states his desire to build an immense national mausoleum. [No doubt.] The building is to contain space for the interment of 2,000,000 bodies. The style is to be Gothic; and for size and magnificence St. Paul's and St. Peter's at Rome will be [no: would be] to this new building as dwarfs are to a giant! The time has gone by for entertaining such a preposterous notion as thus boxing up 2,000,000 bodies.

Railway Traffic Receipts.—The traffic receipts of railways in the United Kingdom for the week ending June 19, amounted, on 13,766 miles, to 831,884*l*., and for the corresponding week in 1869, on 13,579 miles, to 792,580*l*., showing an increase of 187 miles, and of 39,304*l*.. The gross receipts on fourteen of the principal railways in the United Kingdom amounted for the week, on 10,007 miles, to 685,439*l*., and for the corresponding week last year, on 9,865 miles, to 656,017*l*., showing an increase of 142 miles and of 29,422*l*..

Worcester Cathedral Restoration.—A fortnight ago it was stated that Mr. Gilbert Scott's revised estimate for completing the work amounted to 15,000*l*., and that Lord Dudley offered 5,000*l*., and the Dean and Chapter 2,000*l*., leaving 8,000*l*. to be raised by the public of the diocese of Worcester. Of that amount 5,560*l*. have already been promised.

St. Pancras.—Mr. Henry Hewitt Bridgman has been appointed by the vestry assistant surveyor to the northern district. Another assistant surveyor is to be appointed.

Workmen's International Exhibition, 1870.—The honorary secretaries have sent a letter to the *Times*, announcing that her Majesty has consented to become patroness of the Exhibition, which is about to be opened at the Agricultural Hall, Islington, and asking those willing to assist for the loan of shrubs and flowers, offering to award certificates of merit for first-class plants. The exhibition is to be opened on Saturday, the 16th inst., by the Prince of Wales for her Majesty.

Property Sale, Malvern.—Messrs. Bentley & Hill, of Worcester, offered for sale three lots of a freehold and tithe-free building site, situate near Church-street, in the centre of the town, and adjoining the Gentlemen's Club. The restrictions of the land of the Grange Estate, of which this land is a portion, prevented the land being sold. The reserve price was 6*s*. 6*d*. per yard, and the bidding reached only 5*s*. 9*d*. per yard. No shops or public resort of any kind can be erected on the Grange Estate.

The New Landing Pier, Douglas, Isle of Man.—This structure, the cost of which has been nearly 50,000*l*., having been completed to a certain extent, has been opened for the landing and embarkation of passengers. The pier, which is 1,080 ft. long, 50 ft. wide, and has 20 ft. depth of water at low-water, spring tides, is constructed of concrete blocks, from designs by Mr. Coode, C.E., and has been carried out under the superintendence of Mr. Powell, C.E.

Accidents.—On Saturday, at the iron-foundry of Messrs. Fawcett & Preston, Liverpool, two travelling cranes, employed to remove a heavy "condenser," about 7½ tons weight, gave way, and brought down men with it from a height of 20 ft. One man was killed on the spot, another died on Saturday, and a third on Sunday. Nine others were also seriously injured.

League against Strikes.—The delegates of more than a hundred societies of Roman Catholic workmen of Germany, Holland, Switzerland, and Hungary, in a meeting at Cologne, have adopted a resolution by which they invite the members of the various associations to which they belong not to take part in any strike.

Timber Yards in Towns.—The recent fire in a timber-yard at the East end of London will again lead disinterested people to consider whether or not some judicious legislation, with a view to prevent the piling up of inflammable materials in positions threatening the public safety, is necessary.

"Up in a Balloon, Boys!"—A New Orleans inventor proposes to avoid over-crowding in great cities by suspending wooden houses in the air to balloons, which could be chained to the earth! The absurdity of the thing is so supreme that it becomes amusing.

Value of Land at Turnham-green.—Fourteen lots of Mr. Whittingham's sale by auction, at the Roebuck Inn, on the 29th ult., having frontages to the London-road, at Turnham-green, and near to the railway station, were sold for 2,436*l*., being at the rate of 5,340*l*. per acre.

"Indian Public Works."—Sir Bartle Frere's interesting paper, read some short time ago before the East-India Association, was discussed in the Room of the Society of Arts, on Wednesday last.

"Charta Perfecta."—Messrs. Jenner & Knewstubb have sent us two or three quires of note-paper under this title, at various prices, and it seems particularly good. Thank you, Messrs. Jenner & Knewstubb.

The Corinth Canal.—It is stated that the company for cutting the Corinth Canal has finally been established, with a capital of 50,000,000 drachmas (1,700,000*l*.).

Taunton Local Board of Health.—Mr. James H. Smith has been elected surveyor to this Board.

Paving.—A machine for paving has been invented in France, which will lessen the labour, it is said, of a very laborious occupation.

Manchester Abattoir Competition.—We hear that the three premiums have been awarded to three Manchester architects.

Mr. John W. Papworth, Architect.—We hear with extreme regret of the death of this gentleman, after a long and painful illness.

The Bruce Monument.—Mr. George Cruikshank has completed his model, and we will take an early opportunity to look at it.

TENDERS.

For the erection of new Congregational church and lecture-hall, Stamford-hill. Mr. T. Chatfield Clarke, architect. Quantities supplied by Mr. S. B. Wilson:—

Axford & Whillier	£14,387 0 0
Kilby	13,480 0 0
Brown	13,200 0 0
Ashby & Sons	13,100 0 0
Cunder	13,062 0 0
Higgs	12,587 0 0
Brown & Robinson	12,560 0 0
Scrivener & White	12,425 0 0
Dove, Brothers	12,325 0 0
Brass	12,296 0 0
Myers	12,296 0 0
King & Sons	12,278 0 0

For building house on plot 15, Kensington High-street Improvement (exclusive of party-walls), for Mr. James Broadbridge. Mr. Josiah Houle, architect:—

Chamberlain, Brothers	£1,315 0 0
Macey	1,257 0 0
Cooke & Green	1,147 0 0
Cowland	1,142 0 0
Langmead & Way	1,130 0 0
Stimpson	1,125 0 0
Temple & Forster	1,125 0 0
Scrivener & White	1,078 0 0

For the erection of a villa residence at Cardiff. Mr. W. D. Blesley, architect. Quantities supplied:—

Seager	£700 0 0
Smith & Fring	690 0 0
Shepton	630 0 0
Price (accepted)	607 0 0

For Norwich Lunatic Asylum. Mr. R. M. Phipson, architect:—

Pearson	£64,658 4 7
Myers & Sons	47,295 0 0
Gibbons	43,990 0 0
Downing	43,209 0 0
Young & Skipper	43,195 0 0

For building a house and shop in the Chamberwell New-road, for Mr. Peak:—

Shapley & Webster	£283 0 0
Tarrant	647 0 0
Clarke	642 0 0
Brown (accepted)	590 0 0
Ross	420 0 0
Barrett	344 0 0

For mansion and offices, near Leatherhead, Surrey, for Mr. W. Lee. Mr. T. Royce Lysaght, architect:—

Keeble	£8,228 0 0
L'Anson	8,912 0 0
Gammon & Sons	8,868 0 0
Holland & Hannen	8,836 0 0
Mansfield & Price	8,764 0 0
Phillips & Son	8,567 0 0
Trollope	8,563 0 0
Shearburn	8,536 0 0
Nightingale	8,510 0 0
Perry & Co.	8,417 0 0
Higgs	8,370 0 0
Simpson	8,330 0 0
Cunder	8,260 0 0
Hill & Sons	8,148 0 0
Brass	7,726 0 0
Batchelar	7,459 0 0

For works at Hill-side, Cricklewood, in finishing five houses, for Mr. J. Westwood, Manor House, Dulwich. Mr. Frank E. Thicke, architect:—

Foster	£3,873 0 0
Gammon	3,791 0 0
Macey	3,703 0 0
Merritt & Ashby	3,331 0 0
C. A. Hailey	3,293 0 0

For additions to the Union Workhouse, Basing, near Sandwich, Kent. Mr. T. E. Knightley, architect:—

Crabb & Vaughan	£5,700 0 0
Nightingale	5,444 0 0
Wilson	5,300 0 0
Mathews	5,100 0 0
Smith	5,047 0 0
Gibbons	4,964 4 8
Thyne & Wise	4,801 0 0
Wignmore	4,885 10 0
Coleman	4,883 10 0
Woodcock	4,849 0 0
Cotten & Davis	4,844 0 0
Dowl, Dove, & Co.	4,763 0 0
Sollett	4,820 0 0
Cook	4,589 17 9
Chamberlain	4,508 0 0
Richardson	4,550 0 0
Adcock & Rees	4,497 0 0

For four shops, with fronts complete, at Kingsland-green, for the North London Railway Company. Mr. E. H. Horne, architect:—

Sewell & Son	£2,847 0 0
Mark	2,787 0 0
Crabb & Vaughan	2,767 0 0
Kelly, Brothers	2,643 0 0
Scrivener & White	2,678 0 0
Watts	2,585 0 0
Hill, Keddell, & Walbraus	2,550 0 0
Wicks, Bagg, & Co. (accepted)	2,526 0 0

For roads and excavation at St. Pancras School, Leamington Woodside:—

Killingback & Radley	£1,391 0 0
Mann	1,273 0 0
Wignmore	1,270 0 0
Taswell	1,150 0 0
Nicholson & Goddard	1,119 0 0
Cole	853 0 0
Young	740 0 0

For the wood fittings (including those for the dining-hall, chapel, and board-room buildings) at the new work-house, Upper Holloway, for the Board of Guardians, St. Mary, Islington. Mr. R. H. Burden, architect:—

Nutt (accepted)	£3,725 0 0
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For the gas fittings to the above:—

Faraday & Son (accepted)	£556 0 0
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Surrey Drivers' Inn.—We have received a letter from Messrs. J. & A. Wright, complaining of proceedings as to these tenders (printed in our last); but must leave them to settle it with the architect.

TO CORRESPONDENTS.

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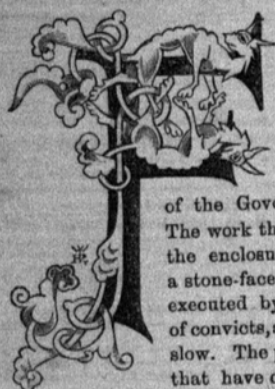
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VOL. XXVIII.—No. 1432.

Chatham Dockyard Extension.



FOURTEEN years ago certain public works were commenced at Chatham, with a view to the ultimate extension of the Government Dockyard. The work that was then done, the enclosure of a marsh with a stone-faced embankment, was executed by a limited number of convicts, and the progress was slow. The progressive changes that have occurred in the construction of ships of war have continued to force the subject of increased dockyard accommodation upon the attention of Parliament and the Admiralty. We had reached the anomalous condition of having a number of huge ironclad leviathans in commission, with scarcely a dock into which they could be received for fitting and repair. The practice of fitting vessels in the stream has long been abandoned in connexion with the mercantile marine, as attended with increased risk, difficulty, delay, and expense, as prejudicial to the service, and demoralising to the men and crews engaged in such operations. With regard to the Royal Navy, however, the revolution in the character and construction of ships has not been accompanied, as it should have been, by a corresponding change in the character of the accommodation for their fitting and repair, and such first-raters as the *Hercules*, the *Monarch*, and the *Warrior*, have been furnished with their boilers and engines, while moored in the Medway, or other tidal waters, subject to the disadvantages of employing floating derricks, to swing weights of from 40 tons to 50 tons, in situations where they are exposed to the disturbing action of both wind and tide. In 1861 a select committee of the House of Commons was appointed to inquire and report concerning a proposed extension of Chatham Dockyard. The witnesses examined made out a strong case of the loss and inconvenience involved by the unsatisfactory and inadequate provision existing for the fitting and repair of ships, even in time of peace, and of the peril and disaster which such inadequate provision must inevitably involve in the event of a maritime war, when the country that can first repair its ships damaged in action doubles its force; one ship with proper dock and basin accommodation being equal to two possessed by another power which has not provided such accommodation. The Select Committee made a strong report as to the need of increased accommodation for fitting out ships of war, and for repairing the engines and making good defects of such ships. The Committee reported that the existing basin and dock accommodation is wholly unequal to the task of maintaining the existing navy in repair, even in time of peace. In the event of a war, there would be, of course, a much larger number of ships in commission, greater wear and tear, apart from casualties in action, and consequently increased need of inspection and repair. They recommended the extension of Chatham Dockyard, because the situation removed it from the danger of being shelled by hostile ships of war, and the Medway is capable of complete protection by fortifications. The extension of a

conveniently situated existing dockyard would also, they reported, be a better and more economical mode of attaining the object in view than the creation of a new establishment. It may be further mentioned in evidence, that the facilities for fitting out ships of war rapidly and safely by other powers are incomparably superior to those afforded by the naval establishments of this country; that France has at Toulon, Cherbourg, and Brest, 260 acres of floating basin, with ample wharf accommodation; whereas the United Kingdom has only 41 acres in all; some of the basins having neither width of entrance nor depth of water sufficient for our first-class ships. Colonel Greene, at that time the director of works at the Admiralty, laid a plan of dockyard extension at Chatham and estimates before the select committee; but these may be supposed to have got into the Circumlocution Office, as no action was taken upon them. In 1865, when Colonel Clarke, R.E., C.B., had succeeded Colonel Greene as director of works, that gentleman presented a plan and estimates, upon which action was at last taken energetically. The plans of Colonel Clarke were a modification, and different in several important respects, from those of Colonel Greene. They were alike, however, in their main features; and, as regards the execution of the work, each estimated the cost on the assumption that convict labour should be taken advantage of to the utmost possible extent. Contracts were entered into with Messrs. Gabrielli in 1866, and in 1867 the works were energetically commenced by the contractors, the amount of convict labour on works included, as well as not in the contract, was from that time largely increased. Since then great progress has been made, and the works will richly repay a visit by professional men and students of engineering.

On Saturday last, on the invitation of Colonel Clarke, director of the works, they were visited by Mr. C. Vignoles, F.R.S., president of the Institution of Civil Engineers, and a number of members of the council, members, and students of the Institution. The party left London by the 10-30 express train from Victoria Station, and, on arriving at Chatham, were at once conveyed to the dockyard extension works in about a dozen vehicles, which waited their arrival. Nothing very remarkable was to be seen in the course of the drive from the station to the dockyard, excepting, perhaps, the singular treatment to which a row of trees which border the footwalk opposite the Marine Barracks is being subjected. The footway is at a considerable height above the carriage-road, and the authorities have made a clean steep slope from the one to the other, which is very neatly faced with concrete, and closely pointed round the trunks of the young trees; these look green and vigorous now, but are likely, it may be supposed, to yield up their lives ere many years elapse, rather than submit to such unnatural treatment or military rule.

On arriving at the grounds added to the dockyard, on which the works are being carried out, the visitors were first conducted to the Gantries where the dressed granite is stored that is to be employed in the construction of two graving docks, to which comparatively little has been done as yet. The blocks are of very large size, and are dressed to perfection. The granite used is from three sources,—from the Jersey Granite Company, Cornish granite from Freeman Bros., and a portion of French granite from Brest. Of the three the Jersey contains the larger proportion of quartz, and is consequently the hardest. The French granite does not differ much from the others, either in quality or price, freight and all outgoings taken into account.

It may be proper before proceeding further to recall the situation of the Dockyard Extension Works. From Gillingham on the Medway the channel describes an irregular curve in a north-

westerly direction, and again turns round in a course almost due south, and passes the old dockyard. Before the extension works were commenced, St. Mary's Creek flowed across this tongue of land from opposite Upnor Old Castle to Gillingham. The creek had a marsh on each side, the portion between it and the Medway. St. Mary's Island, being laid under water at spring-tides. The island, valueless unless embanked, was purchased by the Admiralty some fourteen years ago for 80%; its area is about 150 acres. The new works include the inclosure of St. Mary's Island and portions of the banks of the Medway to the south of the two ends of the creek, by a stone-faced embankment for the greater part, and by a river wall built on piles for the remainder. The embankment and wall, which have been executed entirely by convicts, are about two miles in length, and a good example of water engineering. The principal works, for which the inclosure was an essential preliminary, are a repairing basin, with an area of twenty-one acres, having an entrance 80 ft. wide from the Medway, in the Chatham Reach; intermediate, and communicating with this basin, there will be a factory basin of twenty acres area; and beyond that, with a communication between it and the factory basin, a fitting-out basin of thirty-three acres area, with a river entrance and a pair of locks adjoining it, at Gillingham. The three basins follow the general direction of St. Mary's Creek, which has reduced the excavation work by about a third, compared with what it would have been if the three had been made rigidly in line. The side walls of the repairing and factory basins are straight, but form an obtuse angle the one with the other. The fitting-out basin is nearly in line, for part of its length, with the inner or factory basin, but in its course turns off at an angle in the opposite direction from that at the ends of the other two basins. The basins occupy a somewhat relative position across St. Mary's Island, in the Medway, to that of the West India Docks across the Isle of Dogs, in the Thames. The width of the tongue of land, from the entrance of the repairing basin to the other mouth of the Creek, at Gillingham, is rather more than a mile: the width across the Isle of Dogs is rather less. Although the area of the island is about 150 acres, the whole area of the extension works is about 380 acres. On the completion of the greater part of the embankment the work of excavation was vigorously proceeded with. For conveyance of the stuff innumerable tramways were laid in all directions. The clay taken out that was suitable for brickmaking was applied to that purpose: the remainder was tipped as spoil upon St. Mary's Island, or on the south bank of the Creek, where the ground needed making up. A large surface of good firm ground has thus been laid, ready for the erection of factories, sheds, and workshops. On St. Mary's Island extensive brickfields have been in operation for several years, the whole of the bricks hitherto used on the works having been made by the convicts. A large proportion of the clay for brickmaking is taken from the basins, a portion comes from Burham, and the sand from Aylesford. Six of the brickmaking machines of Porter & Co., of Carlisle, are on the ground. The imported material for brickmaking, the blocks of granite and Portland stone, and all other materials, indeed, are unloaded at jetties erected for the purpose, and conveyed in trucks to the parts of the works where they may be respectively required. At the beginning of this year there were thirty-five millions of bricks in stock; so that the brickmaking operations have been relaxed, and the brickmakers have, in many instances, been put to brick-setting.

The repairing basin and two of the four graving-docks to be provided on its south side are nearly completed; the entrances to the other two graving-docks and the communication

between the repairing and the factory basins are also in a very forward state. The entrance to the repairing basin from Chatham Reach is nearly complete, almost all that remains to be done, before the removal of the coffer dam, being to finish the grooves for the caissons. All the entrances to basins and graving-docks, and the communications between the basins, will be by caissons, not by dock-gates. The bottom of the repairing dock has been levelled, excepting comparatively narrow strips round the foot of the walls. The bottom is of the stuff that was found when the proper level was reached. It is firm, and not likely, as would seem, to rise on the water being admitted: if the *Serpentine* had such a bottom, instead of the gravel-veneered soluble mud Mr. Ayrton proposes to leave in it, it would probably satisfy all parties interested. The graving-docks are notable examples of solid work. The natural foundation is a bed of firm gravel, on which a layer of concrete is laid; a mass of brick-work is superimposed, and over all is laid the floor, of heavy, closely-fitted blocks of granite. The copestones of the basin walls are of heavy granite blocks throughout. The factory basin, originally contracted for, but the contract for which has been surrendered as we understand, is being excavated, and the walls built entirely by convicts, and excellent work they are making of the walls. They are, where the gravel can be reached, founded upon it by a layer of concrete of from 18 ft. 6 in. to 20 ft. broad. The walls batter 1 in 9 on the inside, and with the outside batter are reduced from 20 ft. in thickness at the bottom, to 8 ft. at the top. They are concreted in pockets, with alternating bands of brickwork across the whole thickness of the wall. The adhesion between the brickwork and the concrete, we were informed, is perfect. The basin walls are faced on the inside, from a little under the water-line, with Portland stone, with a granite coping over all. Bollards, of cast-iron, about 2 ft. square, with the corners rounded off, have been set in the counterforts along the north wall of the factory basin. Cranes have also been provided, of about 6 ft. diameter, that are a credit to the workmen who built them, whether bond or free. The bollards are 9 ft. long, and are let in, for nearly two-thirds of their length into the building. A great deal of work has been done in excavation and building for the factory basin, but much still remains to be done ere the boom of the steam-hammer, and the rattle of the riveter, be heard in the basin or its neighbourhood. Very little has been done towards the formation of the fitting-out basin. The portion of St. Mary's Creek that it is to absorb, remains *in puris naturalibus*, excepting, indeed, that the stream of water from the west has been cut off, and that, on the north side, about 600 yards of the basin wall have been erected. This short length is apparently designed to serve as part of a dam, which is to be carried out to the Medway and round in front of the entrance to the basin, to Gillingham, thus enclosing the area in which the fitting-basin works are to be carried on. At Gillingham the engineers have a troublesome piece of work in hand in the construction of a public wharf, in exchange for one that they had to appropriate at the mouth of the creek. They were unable to find holding-ground for piles for the foundations, but have at last conquered the difficulty by tipping material into the water, until it has reached a firm bottom, and given them a solid embankment upon which to operate.

Colonel Clarke hopes to be able to admit the water to the repairing basin, and to have the two graving-docks ready for use in April next, and to have the factory basin completed about December, 1871. The completion of the works will probably occupy six or seven years more.

Before the inspection was completed, Colonel Clarke hospitably entertained the visitors—about 150 in number—at an excellent luncheon provided in the spacious mould-room.

After a few toasts appropriate to the occasion had been given and acknowledged, the inspection was resumed. The visitors were conducted first to a point at which the convicts were employed in mixing the concrete, and pitching it down a height of about 40 ft. to the gravel at the bottom, to form the foundation. The basin walls are in many places about 40 ft. high from the gravel upon which the concrete is laid to the top of the coping. Generally the gravel is met with at a depth of from 45 ft. to 52 ft. from the surface. The strata, downwards, are, for the greater part (on the unmade ground) mud, peat, greasy silt, gravel, clay, chalk. It is remark-

able that the lines of demarcation between the clay and the chalk are almost as clean and clearly marked as the black border on a sheet of note-paper; there is no intermixture. Where the gravel is too deep to be reached, the walls are founded on piles driven into the gravel.

The three basins will have, in common, a depth of 33 ft. of water at spring, and 30 ft. at neap tides. The graving docks are 456 ft. long at the coping, 416 ft. on the blocks; they are 80 ft. wide at the entrance, and will have 31 ft. 6 in. of water over the sills at high water spring tides.

There are at present 1,377 convicts employed upon the works, and 232 free men in connexion with them. These men are under the direction of the Admiralty, and their officers, in conjunction with the prison governor and his subordinates. In addition to these, the contractors have 750 men employed. The convicts are employed in very various kinds of work, the greater number of them in excavating and building, others in brickmaking, waggon-hauling, others as carpenters and smiths, in making and repairing waggons, tools, and plant, about fifty driving horses, of which a large number are employed, in addition to eight locomotive engines; some are plate-laying, others attending at points; a number are making Portland cement. The bricks made on the ground are a little rough, but they are hard and sound, and admirably fitted for the work in which they are used.

The convicts, whatever their previous demerits may have been, appear well entitled, generally, to credit for their tractability and industry, as displayed on these works. The rapidity with which they adapt themselves to the work is surprising. Excellent masons and carpenters can, in many instances, be made out of professional thieves in three months. The fact is, that the convicts are cleverer men than many of the ordinary labourers. The gangs are attended by their warders and assistant-warders, who are armed with cutlasses. In addition to these, men of the Convict Guard, armed with carbines and bayonets, are stationed at various parts of the works. They are paraded in going and returning from work, and marched in squads, each accompanied by a warder. We were glad to notice a considerable number of the prisoners with red facings to their frocks, which indicate good conduct, but unhappily we noticed as many "black-birds"—men with a black leg to their breeches—working in irens, their offence having been striking an officer. The "canary-birds" are distinguished by a yellow leg; their offence has been the attempt to escape. The daily life of the convicts is occupied thus:—Rise, wash, clean cells, &c., at 5 a.m.; breakfast at 5.45, attend morning prayers at 6.15; muster for work at 6.30; dine at 12.15; resume work at 1.15 till 6.10; cleaning shoes, shaving, bathing, reading in cells, evening instruction, letter-writing, 6.40 till 7.45; taking down hammocks, 7.45 till 8; at 8 into hammocks to "sleep the sleep of the just." The mustering, parading, and marching subtract a considerable portion from the clear working day; and, if the truth must be told, the worthies who have to wear mud-boots, notwithstanding that none of them are embarrassed with a redundancy of calf, are far from rapid in making their toilet on arrival at the working ground. Workers and their work, however, at Chatham Dockyard are both exceedingly interesting to observe and study.

Our thanks are due for the communicative courtesy of Colonel Clarke, Colonel Pasley, Mr. Bernays, and other gentlemen in charge of the works.

WORKMEN'S INTERNATIONAL EXHIBITION. THE QUEEN'S VISIT.

On Monday last, while the ears of half Europe were strained—the expression is hardly metaphorical—to catch the shrill challenge of the French trumpet, or the hoarse reply of the Prussian ordnance, Queen Victoria was unostentatiously engaged in riveting another link between the palace and the cottage,—between the throne of Alfred, and its solid basis on the forge, the anvil, and the bench.

Being unable personally to open the Workmen's International Exhibition,—a function which the Prince of Wales will, we believe, discharge, this Saturday,—the Queen graciously signified her intention to visit the Agricultural Hall, in which the objects exhibited were in course of arrange-

ment. Nothing could be more welcome, than the intimation,—nothing more simple, and, therefore, nothing in better taste, than the visit. Industrial Islington and Clerkenwell seemed unaware of the honour intended. An hour before her Majesty's arrival, not a scrap of bunting, not an extra idler, not a portly policeman, was to be seen in the quiet streets that give access to the large building. A little after ten, four or five mounted policemen, and about four times that number on foot, drew up in line in the back yard of the Hall, by the gateway which affords entrance for the carts, and vans, and bulky packing-cases, that bring the materials of the Exhibition. At a few minutes after half-past ten the gates opened, the sound of a hearty cheer from the extempore crowd outside rang through the building, and a carriage and pair drove in through the yard, pulling up under the gallery, within the Hall itself. A knot of some two or three dozen gentlemen was in attendance on the spot. Within the Hall were only exhibitors, or persons in some way connected with the enterprise. A line of workmen, in fustian jackets and white aprons, whom it was unnecessary to admonish to uncover, stood opposite. A graceful young lady, then a younger sister—daughters of England in the proudest, as well as in the simplest sense of the term—alighted. The organ pealed out "God save the Queen," and then a Lady in mourning stepped on the floor, bowing repeatedly and earnestly to those who welcomed her.

The scene—as so often is the case on similar occasions—had so shaped itself that it might have been arranged by a painter or by a novelist. The Hall is very far from full—much of what has been received is not unpacked, and the committee are yet able to invite good exhibits from *bonâ fide* contributors. The comparatively empty space through which the royal party leisurely passed, had the effect of bringing the Queen, as it were, eminently into direct intercourse with the few representatives of her people who had the privilege of being present. The tressured lion of Scotland, and the three red guardians of the English field, were emblazoned in the banner which fell over the front of the gallery by the point of arrival. Ireland was as invisible in the quarters as, we fear, she is in the Exhibition.* A glass case full of those glorious fabrics of Indian skill which Dr. Forbes Watson has done so much to introduce to the English manufacturers, appropriately faced the door. In the centre of the Hall, to the left, was a marble statue of Garibaldi,—a well-executed figure, and a good likeness,—raising a very life-like hand, and dressed in the red shirt, knotted bandana, loose trousers, Wellington boots, and alighting sabre, so familiar to the memories of 1861. Opposite this great favourite of the working classes of this country, was a well-carved pulpit—the work of a journeyman, who has laboured on it since Christmas. Behind that, along the axis of the Hall, was a spinning-wheel. The pulpit and the spinning-wheel—the evidence of the community of interest which is awakening, for the first time in history, between the artisans of England and those of the Continent—the Queen of England walking through the midst of the workmen, none the less reverent that they had been too busily employed to put on their Sunday clothes—an earl's son, the president of the committee on one side of her, and the working secretary, straw hat in hand, on the other, followed by the little group of the two princesses, the Marchioness of Ely, two or three gentlemen of the Court, and the Executive Committee of the Exhibition,—all this told of effort, and of effort which cannot prove unsuccessful, to supply the defects of our national habits, and to lay, deeper than before, the foundations of our national welfare.

Among the objects which the Queen inspected with the most evident interest was a model of a safety apparatus for preventing one class of colliery and mining accidents, namely, those which arise from the over-winding and consequent breaking of the rope. The model is only on a small scale; but the applicability of the system is stated to have been satisfactorily tested. The ready and anxious sympathy evinced by Queen Victoria for the wives and children of miners, who have been suddenly summoned from their work by one of those fearful blasts which ought not to be regarded as mere "accidents," has endeared the Queen to

* Belfast presents an honourable exception; we hope there will be others.

the population of the "black country," and re-
 occurred freshly to the memory of those who saw
 her Majesty pause before the model.

Near to the safety apparatus was one of the
 most interesting objects which the invitation to
 exhibit has yet attracted. It is a reflecting
 telescope, of 10 ft. focus, and 13 in. diameter of
 reflector, made entirely, and that within eighteen
 months, by Mr. Bush, a baker, of Nottingham,
 who carries on the daily business of his very
 fatiguing trade. Mr. Bush had the satisfaction
 of explaining his workmanship to the Queen.
 He has adopted most of the recent improve-
 ments, together with some of his own,—such as
 the construction of a honeycomb cast-iron bed,
 or diaphragm, to support the reflector, and to
 prevent that bending or buckling of the
 surface which is so readily effected, and
 that with such unpleasant optical results. Mr.
 Bush has made two reflectors, one of which
 is of the usual speculum metal, ground by him-
 self (which is in the instrument, and which is
 remarkable for the purity and intensity of the
 light which it reflects), and one of glass, also
 parabolically ground, on which it is intended to
 deposit a surface of silver. The telescope is in
 what is called a cradle frame, bolted together
 with longitudinal wrought-iron bolts, passing
 through wrought-iron distance tubes and circular
 distance pieces. The segment which attaches
 the trunnion, or axis of movement, resembles
 the cylinder of a locomotive. The instrument
 is equatorially mounted, and is to be moved by
 clockwork. A prism of Munich glass catches
 the object reflected, and refracts it to the eye-
 piece. The division of the brass arch is also the
 handiwork of Mr. Bush, who has made his own
 lathes, grinding apparatus, and dividing appa-
 ratus. Without claiming the extreme (and prac-
 tically unnecessary) finish of the instruments of
 such makers as Messrs. Troughton & Simms, Mr.
 Bush's reflector seems to us to be much what such
 an optical instrument ought to be. It is an honour
 to the maker, and a just source of pride to the
 town of Nottingham.

The third article which most evidently arrested
 the advance of the Royal party was a noble
 ebony cabinet, inlaid with Florentine mosaic,
 encrusted with *lapis lazuli*, and ornamented with
 statuettes and reliefs in silver gilt, which is
 sent from Florence. Italy, indeed, has come to
 the fore in this Exhibition. From whatever
 cause it may arise, the Italian exhibitors are
 the first in the field: first in time, which is
 much, and which is especially novel for Italy;
 first in quantity, so far as we can at present
 judge; and first, in not a few instances, in excel-
 lence. Nor is it Florence alone that sends her
 marbles, and alabaster, and mosaic. Naples
 sends her characteristic work in coral and in
 lava; Rome her shell cameos—those nearest
 imitations of the precious onyx reliefs of the
 ancients; Sorrento sends the well-known mar-
 quetry and perforated woodwork of the brothers
 Gargiullo; Genoa sends her silver and gold
 filigrees; Venice her opal and aventurine,
 and ruby-tinted glass. The marble of Car-
 rara is represented in numerous statues,—a
 bust of King Victor Emmanuel at the head of
 the trophy; a blind Cupid feeling his way, a very
 pleasing subject; and several other sculptures,
 deserving more detailed mention than can now
 be afforded. We must not, however, omit the
 life-size statues by Cavalier Pandriano. To the
 one of Garibaldi we have already alluded.
 Another represents Cavour, and a third Lord
 Palmerston. The sculptor has been beaten by
 the frock-coat and the necktie; he has given
 them faithfully, but without that idealisation
 which alone can make such attire tolerable in
 marble.

While speaking of sculpture we may mention
 the reproduction, in sandstone, of one of the
 most original (and repulsive) of the characters
 of Mr. Dickens, the ill-conditioned dwarf, Quilp.

No detailed account of the Exhibition can yet
 be given. The catalogue is not printed as we
 write. Indeed, we are speaking of a time five days
 antecedent to the proposed date of opening, and
 every one knows how such matters are usually
 left for a race against time; yet we cannot but
 think that the workmen of this country are far
 from being, as a rule, at all aware of what a very
 praiseworthy effort has been made by the Execu-
 tive Committee to enable them to help them-
 selves. The English workman is far too proud
 to be patronised. Nothing affronts him more
 than to pat him on the back. The pith
 and sinew of the old English stock are in his
 limbs, and he has a spirit of self-reliance
 which is eminently insular. But, with all

that, he knows, and he is daily more fully
 aware that he wants, very much in order
 to enable him to race with the workmen of
 many Continental states. There is much that
 statesmen, and philanthropists, and directors of
 museums, are doing, more or less directly, to aid
 him. But, after all, there is nothing like self-
 help. To afford a scope and a theatre for this
 seems to have been the object of the Executive
 Committee. As such, it has been fully
 appreciated abroad,—it wants to be better
 known at home. Anything more unlike a job
 on the one hand, or a piece of patronising display
 on the other, than we have hit upon, almost
 casually, at Islington, it is not possible to con-
 ceive. We hope that this will be fully under-
 stood throughout the length and the breadth of
 the country, and that the vacant space which is
 now available will be filled.

Attention must be called to one feature in
 this Exhibition, which is its especial boast.
 Among English localities, Birmingham and
 Sheffield are the first in the field—the former
 with a beautiful case of electro-plate, the latter
 with knives, dirks, scissors, and other articles.
 In these cases are fixed printed cards, on which
 are detailed the several processes which are
 resorted to before each object is complete—
 designing, modelling, casting, embossing, en-
 graving, and so on; and to each of these is
 affixed the name of the workman actually
 engaged. Each artificer, it may be said, signs
 his own work. The true spirit of industrial art
 is thus brought into direct opposition to the
 mere greed of trade. The maker comes into
 the field to assert his identity, which the seller
 is but too content to smother. It is a new
 application of the old principle to which the
 municipal grandeur of the Middle Ages is due.
 It is the sound moral rule of *sum cuique*. It is
 the application of the co-operative system to
 industry. Nor do we doubt that in the applica-
 tion of the principle lies the best hope of our
 future industrial welfare.

We have omitted to glance at one table which,
 containing nothing that is ornamental, may
 well escape any eye but that of a workman;
 and yet it is one of the most important indi-
 vidual features of the Exhibition. It is a table
 covered with scraps of iron. There is a plate
 some half inch or three-quarter inch thick,
 doubled in four, like a sheet of note-paper.
 By its side is a small bar, drawn out into an
 endless corkscrew at one end, and hammered
 into a sort of knife at the other. The worm
 was twisted while hot, the blade was ham-
 mered when cold. Every specimen displays
 unusual malleability or ductility in this ordi-
 narily stubborn material. Two or three lumps of
 coarse grey metal—being neither more nor
 less than fragments of the famous "Seely's
 pigs" (or, as they ought rather to be called, the
Builder's pigs, since we first drew attention to
 their wasteful use in the pathways at Ports-
 mouth)—lie close by. By the application of a
 chemical agent in the puddling-furnace, the
 coarse, poor metal has been converted into that
 of fine-grained texture. Knowing what we do of
 the race which Russia is about, sooner or later,
 to run with this country in the manufacture
 of iron, we direct especial attention to this
 discovery of Sir Antonio Brady. Of great inter-
 est, too, is the collection of copies (models and
 drawings) sent by the Industrial School of
 Amsterdam, established to aid technical educa-
 tion.

The King of Italy sends a couple of iron clads
 to convey his workmen, and to do honour to the
 working man's fair. The King of Denmark does
 the same. The King of Württemberg follows the
 example. It is understood that some effort is to
 be made to show an English welcome to the
 working men thus royally conveyed to our
 shores. We hope the appeal will be fully re-
 sponded to. We trust that the great and generous
 body of English workmen, understanding now for
 the first time what is actually going on at
 Islington, will come forward to strengthen the
 hands of the committee, to fill the Hall with
 specimens of handiwork, and to welcome their
 brothers of Italy, Denmark, Germany, France,
 Holland, and other countries not only with the
 hospitality of hosts, but with the closer than
 free-masonic grip of brothers.

Royal Visit to Reading.—Messrs. Alfred
 Mills & Sons ask us to mention that the
 Masonic arch at the Station Gates, Friar-street,
 and the triumphal arch at the Grammar School
 were designed and produced by them.

THE LATE MR. J. W. PAPWORTH.

JOHN WOODY PAPWORTH, the eldest of the
 three children of the late John Buonarroti Pap-
 worth, architect to the King of Württemberg,
 was born on the 4th of March, 1820, in Bath-
 place, New-road, Marylebone.

He completed his education at the University
 School in Gower-street, and about 1836 entered
 more strictly into professional pursuits under his
 father, in whose office and at whose right hand
 he remained until the retirement of the latter
 into the country early in 1847, and whose death
 occurred 16th of June in the same year. In
 1837, when the then Government desired to
 establish the "Government School of Design"
 for the promotion of art manufactures, the
 arrangements were left in Mr. Papworth's hands,
 who received the appointment of "Director";
 and his son assisted him greatly in fitting up the
 rooms at Somerset House, then just vacated by
 the Royal Academy of Arts, and in obtaining
 the collection of casts, books, and other works of
 art necessary for the purpose. On the opening
 of the school he was appointed Secretary to the
 Council, but retired when his father resigned
 his appointment at about the end of the first
 twelve months. During succeeding years he
 worked on the various designs required from the
 office by the late Mr. James Morrison, for his
 seats at Fonthill and Basildon; by Mr. William
 Leaf, at Streatham; by Mr. Alexander Murray,
 at Cally, Kirkcudbrightshire; for Lord Lucan in
 Hanover-square; and by other of his father's
 clients, including the residence in Clapham Park
 for Mr. J. E. B. Stevenson, the design and super-
 intendence of which were almost all his own.

During this period he made several designs for
 the ornamental manufacture known as Austin's
 (now Seeley's) Artificial Stone; and for many
 of the manufacturers introduced through the
 establishment of the school above mentioned.
 He designed the monument to the memory of
 Thomas Hardy erected in Bunhill-fields Ceme-
 tery by his friend Mr. Alexander Galloway, and
 others; made the drawings for a "Holborn
 Valley Viaduct" for the late Mr. John Galloway,
 C.E.; assisting him also in mapping and levelling
 a proposed line of railway through North and
 South Wales, during the autumn of the year
 1845, so rife in schemes of the same nature.

In 1838 he received the silver Isis medal of
 the Society for the Encouragement of Arts,
 for a design for a park entrance; and in 1840
 the gold Isis medal for a design for a naval
 monument in commemoration of England's
 heroes and successes; and in 1845 the "Stock
 Medallion for the best design for a Town and
 County Hall." This is probably the last one
 that was given under the bequest of Mr. John
 Stock, 1781.

On the 1st of May, 1839, he was admitted a
 student of the Royal Academy of Arts in
 Trafalgar-square, and was an unsuccessful com-
 petitor on two occasions for the gold medal for
 architecture of that institution. His drawings
 for these *projets* are elaborate specimens of
 design. From this period for nearly twenty
 years he was a constant exhibitor at the annual
 exhibitions of that institution.

In 1841 he was elected an Associate, in 1846 a
 Fellow, and served on the council on one or two
 occasions, of the Institute of British Architects,
 with which society he maintained an intimate
 connexion and active interest, not limited by his
 severe illness in later years. In 1842 he ob-
 tained the Soane Medallion (the third one that
 had been given) for a design in "Restoration of
 Crosby-place, London," to which was annexed a
 purse of ten guineas, presented by Miss Hac-
 kett: the drawings, together with a manuscript
 history and description of this well-known resi-
 dence of former days, are in the collection of the
 Institute. The plan was engraved in 1844 in
 Mr. Hammon's account of the building, with a
 high encomium "upon the careful and particular
 survey of the existing vaults and buildings"
 made by Mr. Papworth. In 1843 he gained the
 Institute Medal of Merit for an essay "On
 Synchronism in Architecture," and the Institute
 Medal in 1847 for the best essay "On the Adapt-
 ation and Modification of the Orders of the
 Greeks by the Romans and Moderns." This was
 the last of the series of medals gained by him.

With the pen ever in his hand, and "fine art"
 with "ornamental decoration" in his thoughts,
 he was always jotting down the results of his
 studies in notes or lectures. For Weale's
 "Quarterly Papers on Architecture" he contri-
 buted to the first volume in 1844 a paper on
 "Artistic Ecclesiastic Decoration," as exhi-

bited in a collection of designs made at Rome about the middle of the last century, for a chapel at Lisbon, being a volume of sketches with estimates for the execution of the several parts; and, with his brother Wyatt, published "Specimens of Decoration in the Italian Style," the plates being etched by themselves. He read at the Institute in May, 1848, "Notes on Illustration of some Drawings of Præneste, Ancient and Modern," when presenting them to that society. His study of Egyptian antiquities was evidenced by his lecture on two nights in 1849, explanatory of the "Features of the Connexion between the Architecture and Chronology of Egypt, with an Account of the highly-valued Work by J. B. Lesneur 'On the Chronology of Egypt illustrated by its Monuments,'" then just published; and it was at this period that he formed his collection of ancient and modern coins, working and being assisted in both studies by a kindred mind, that of the late James Morant Lockyer, F.R.I.B.A.

During this latter period Mr. Papworth executed a difficult work in placing a new roof over the side premises of the Argyll Rooms in Windmill-street; received a certificate of competency to act as district surveyor from the official referees under the former Building Act; and made the several designs for the extensive project submitted by the late Mr. John Galloway, C.E., for providing London with cattle-markets and abattoirs, and gave evidence before the late Professor Hosking, who had been appointed to report upon the scheme. Many designs were made by Mr. Papworth for glass, terra-cotta, pottery, paper-hangings, and other art manufactures for the proposed "Exhibition of the Industry of all Nations, 1851," inclusive of a design for a carpet, to be worked in worsted-work by 150 ladies of Great Britain: this was effected, and the carpet was subsequently graciously accepted by her Majesty. Mr. Papworth was himself also an exhibitor of various designs for art manufactures, and received a bronze medal for services. He assisted the editor of the *Illustrated London News* in obtaining representations of works exhibited, and in illustrating them for that periodical; and in order that a notice should be recorded in the annals of the Institute concerning this important Exhibition, he prepared a paper, being "Considerations upon some of the Productions connected with Architecture in the Exhibition of 1851," which occupied two evenings in the delivery. Again, in 1855, he visited at Paris the Exposition des Produits d'Industrie, and recorded his notes for a similar intent upon the professional works, materials, and drawings submitted therein. During this visit he obtained an introduction to M. Adolphe Lance. The chief topic of conversation was "A Diploma in Architecture," when M. Lance requested him to present to the Institute a copy of his essay on the subject, hoping also that he would be able to introduce it for discussion at one of the meetings. The address of Mr. (now Sir William) Tite, M.P., having, in November, urged the institution of an examination and of its necessary result, a diploma, Mr. Papworth read "An Abridgement of M. Lance's Essay, with Remarks and Suggestions." A discussion followed on a subsequent evening, when a "Memorial from the Architectural Association" was read, urging the desire of the younger members for the establishment of an examination. Little was done until 1860, when the Association a second time asked the Council to institute a voluntary architectural examination. A committee was appointed to investigate the subject; Mr. Papworth, acting as its secretary, gave considerable attention to it, together with the late Mr. Arthur Ashpitel and others. He urged the desirability of the diploma on several occasions, assisted in the formation of the papers, and of the examinations, acting as moderator upon two occasions, and once (1866) as examiner. He felt deeply of late years the coldness with which the scheme was received by the succeeding younger members of the profession, and the desire evinced for "rewards" to be granted to those who passed such an examination. He mainly assisted in getting up a course of lectures for the benefit of the students intending to present themselves, and on every occasion warmly supported the scheme. He also gave much attention in committee to Mr. G. G. Scott's proposal for a "school for artistic architectural education," but which from various causes laid dormant until the present year. He served till lately on the board of examiners under the Metropolitan Buildings Act, 1855; being active, with others, in the preparation of the questions,

and in the examination of those who presented themselves.

During this period he designed and superintended the Albert Institution, Gravel-lane, for the Rev. Joseph Brown, the rector of the parish of St. Anne's, Blackfriars, receiving a silver trowel from his hands on its completion. He also designed a large mansion for Mr. Walter Mellor, to have been erected at Cricklewood: alterations to a house in St. James's-square, now pulled down; additions to a house at Epping, for Mr. Richard Rothwell; and at Streatham-hill, for Mr. Harold Turner, with other works of similar character; besides several projects for a summer palace which were submitted to the Pacha of Egypt. The last of many successes in competitions was, in conjunction with his brother, for the additions to the Guildhall, Courts of Justice, and Assembly-room, at Cambridge, in 1859, for which they gained the second prize.

In 1854, he explained at a meeting of the Institute his theory of the construction of domes, differing entirely in principle from those put forward by other authors: it has been adopted by Mr. James Fergusson, in his "Handbook of Architecture."

Two papers read at the Institute in 1857 and 1862 must be noticed as exhibiting the bent of his studies at the period, namely, "Beauty in Architecture, and its Alliance with the Past," and "An Aesthetic Principle in Decoration," a third one, read January 15th, 1866, "On the Roofs of Hellenical Temples at Egina and Bassæ," was an important attempt to clear up the mystery as to the mode of lighting those ancient structures. This was, perhaps, his last attendance at the meetings; for he was then suffering under the disease which eventually proved his death. Two or three years previously he had sprained his right foot, and otherwise injured it. Probably, careful attention to his health might have prevented any fatal termination; but, surveying a property on a bitterly cold winter's day, and returning home benumbed, gangrene of the same foot gradually set in. For two years he was confined entirely to the bed, and was only enabled, during the following two years, to ride, or to walk about on crutches. At Christmas last, while his friends were hoping that the healing of his foot had been effected, the left one likewise gave way. The consequent confinement proved too much for his injured health. For some weeks he gradually sank, and expired, without pain, on the evening of the 6th of the present month, in the fifty-first year of his age. He was buried in the new ground of the Highgate Cemetery, on Saturday last.

In the year 1847, having, as Mr. Papworth considered, some unemployed hours, he commenced the formation of an "Ordinary of British Armorial" for his own private use. The labour in cutting up, sorting, and re-arranging into divisions, subjects, and heads, pasting down, &c., was carried on by him most unremittingly, with but little assistance from others, and that only in the preliminary work, which extended over about four to five years. The existence of this enormous manuscript having transpired, and its utility having been proved by constant reference to it, Mr. Walford, Mr. Albert Way, and several other eminent lovers of heraldry and archæology, proposed to him that it should be published for public benefit. Even then several of their friends doubted the fact of the existence of such a work prepared by a single individual, and could only be convinced of its completion by the sight of the drawers full of the prepared sheets, and by a pleasurable consultation of its efficiency. Acting under the advice of these friends, who obtained for him a list of subscribers, he copied some twenty other lists of "coats of arms" of recognised authority, interspersing them with his arranged material, and commenced the printing of the work in parts, of which fourteen had appeared at the time when ill health prevented his giving any further attention to it. About three-fifths have been completed. Some of his friends attribute Mr. Papworth's loss of health mainly to the close application given by him to the careful revision of the proof-sheets—a care which was often gratefully acknowledged in letters from subscribers and others.

In 1853 the brothers published together an octavo work on "Museums, Libraries, and Picture Galleries, Public and Private," availing themselves of the advantages of the "Public Libraries Act," which had been passed in 1850.

Another literary undertaking that engrossed much of his attention preceded from the found-

ing of the Architectural Publication Society in 1848 by his brother, Mr. Wyatt Papworth. Besides writing annually the descriptions to the illustrations, he translated the old German work by Roriczer "On the Geometric Principles of Drawing a Pinnacle," &c., which appeared in one of the earliest parts of the text. From the commencement of the "Dictionary of Architecture" to the latest moment, he gave to the preparation of most of the articles all the information of which he was possessed; and in the careful revision of the proof-sheets, all the research, however elaborate, which he considered they required, whether as to a fact or to a date. Even so lately as the middle of June last, he obtained the kind assistance of Mr. J. B. Waring in consulting a scarce work in the British Museum Library for correcting an error which appeared to him to have escaped the observation of all previous writers.

His facility in reading Greek and Latin, as well as most of the modern languages, was very great. His skill in architectural drawing and artistic colouring; his knowledge of the arts and sciences; his intimate acquaintance with the history and practice of his profession, and all matters connected therewith, rendered him a mine of information to all those who sought his advice or opinion upon such and similar matters; and to them it was always given in the most liberal and generous manner, for his selfishness formed no part of his character. His friends ever appreciated his warm heart and kindly feelings. His predilection for the pen rather than for the pencil was noticeable at a very early age, for when yet an infant he considered it time to commence earning his own living, and set to work to write a preface to his proposed life of Julius Cæsar. His mind was ever on the stretch for information, and showed its capabilities in great facility of research and investigation, and for doing all things in the best possible manner; his thoroughness in work was always appreciated; a slovenly system did not suit him. His memory was very tenacious of what he read, although a very quick reader; and his great flow of spirits and patient endurance of pain enabled him to withstand for years the effects of the deplorable complaint under which he so long suffered.

NEW POOR-LAW OFFICES, GATESHEAD.

THE foundation-stone of the future Poor-law and Registration Offices, Gateshead, has been laid by the Chairman of the local Board of Guardians. The proposed structure will be in the Italian style of architecture, from plans prepared by Mr. T. Gibson, architect, Newcastle. The site selected upon which to raise the erection is at the junction of Prince Consort-road and Walker-terrace with the Hexham-road. There will be a frontage of 80 ft. in Prince Consort-road, and 48 ft. in the Hexham-road, with two flats, ground and upper.

The principal entrance will be in Prince Consort-road, and will consist of a portico and spacious lobby, the latter of which will lead into a hall, from which the staircase to the upper portion of the building will ascend. On the ground flat, to the left of the entrances, will be the apartments designed for the relieving committee, relieving officers, and male and female waiting-rooms. On the right hand will be the registrar's office, clerk's office, muniment-room, and waiting-room. Behind all these will be yards and other conveniences. Entrance is also obtained to the clerk's office by a side door from Hexham-road. The first floor is divided into the board-room,—35 ft. in length, 19 ft. broad, and 13 ft. high,—clerk's offices, committee-room, waiting-room, and sundry apartments for the use of the porter. The contractors are Messrs. T. & R. Lamb, who have engaged to complete the structure for 2,620l.

THE ADMEASUREMENT OF SKY IN CASES OF LIGHT.

WHEN a new building is erected so as to cut off an appreciable amount of light from a window of some adjoining tenement, the loss of light occasioned thereby is a frequent subject of dispute in the law courts: consequently it is of great importance that an accurate mode of measuring such loss should be in the hands of surveyors, who are called in to give their evidence in such cases. One method lately introduced is

as follows :—The sky-surface seen from an unobstructed window is supposed to be represented by an equally illuminated quarter-sphere, divided into a number of segments by circles of latitude and longitude, and the value of the light from each segment as seen from the window, which is supposed to be at the centre of the sphere, is calculated for every 10° each way, and figured on a table. When it is required to find how much light is cut off from the window by any proposed building, its vertical and horizontal distances therefrom, together with the angle which a line drawn from it to the window makes with the face of the wall containing the window, enable us to find the number of segments of sky-surface which are obscured; and by addition of the calculated values, as shown by the tables, to compare the loss of light with that which the window enjoyed before the erection of the said building.

A paper on this subject has recently been read at the Institute of British Architects, by Mr. E. Wyndham Tarn, M.A., showing how the values of the light from various parts of the sky may be calculated, as he believes, with the greatest accuracy by aid of trigonometry and the integral calculus; the light being supposed to be partly cut off by the thickness of the walls on each side, and at top of the window, so that the quantity obtained from the parts of the sky-surface on the extreme right and left, and also near the zenith, is very small, and the first 10° of surface are entirely neglected.

Also, since the light on the sides and near the zenith enters the window obliquely, the quantity from those parts is diminished as their distance from the meridian or horizon increases. We have also to take into consideration that the areas of the several zones of 10° in width diminish as we pass from horizon to zenith. The following table (Table 1) shows the relative values of light entering a vertical window from different parts of the surface of the sky, on the hypothesis of the light being equally diffused throughout the whole area of the sphere.

The hypothesis upon which this table is based,—namely, that the light from the sky is equal for equal areas in every part, although a convenient one to adopt for calculation, and the one generally assumed by surveyors, —is far from being physically correct, as

the light obtained from a given area of sky surface near the zenith is always brighter than for the same area near the horizon. This can be shown by experiment, and has also been demonstrated by Mr. Tarn, in his paper "On the relative Illuminating Powers of different Portions of the Sky-surface," published in the *Builder*, December 15th, 1866; in which he shows that the illuminating power of equal areas of the sky-surface varies as the sine of the altitude. Upon this principle the second table has been constructed, showing the relative values of light entering a vertical window from different parts of the sky-surface, on the supposition of a variable diffusion of light.

In these tables only one-half of the quarter-sphere is indicated, since the other half on the opposite side of the "meridian" will have exactly the same values. The numbers in the column marked "Value of each Zone," are simply obtained by adding together all the figures given in the other columns in the same horizontal line: so that when a whole zone is obscured, the loss of light is shown without any calculation. The total at the bottom of the column is the sum of all the numbers in the table, and represents the entire unobscured light from the half of the sky-surface. As an example, we will suppose that a new building obscures the whole of the three lower zones of the half-surface, or 30° from the horizon, together with 40° horizontal, or 4 segments, measured from the meridian of the next zone, with 20° horizontal, or 2 segments of the next zone, measured from 10° to 30°. The calculation is as follows, taking Table 2 :—

1st zone.....	104
2nd „	294.6
3rd „	397.3
4 segments of 4th zone	88
	82
	75
	64
Segment of 5th zone 10° to 20°	74
Do. do. 20° to 30°	67
	1246

1246 : 2100 :: 3 : 5, nearly.

So that 3.5ths of the light from half the sky-surface, or 3.10ths of that from the whole surface, is obscured by the proposed erection.

TABLE 1.—Illuminating Power of Sky-surface uniform throughout.

Value of each Zone.	0°	Z	E	N	I	T	H	0	0
54.4 10°	11	10.4	9.4	8	6.6	5	3	1	0
174 20°	35.5	33.3	30	26	21	15.4	9.6	3.2	0
336.6 30°	68.4	64	58	50	41	29.5	18.6	6.2	0
544 40°	111	104	94	81	63	48	30	10	0
748.1 50°	153	143	130	111.5	91	66	39.6	14	0
944 60°	193	180	163	140	114	83	52	17	0
1088 70°	223	208	188	162	132	96	60	20	0
1177 80°	240	225	204	175	143	104	65	21	0
5093 Total	0°	10°	20°	30°	40°	50°	60°	70°	80° 90°

TABLE 2.—Illuminating Power of Sky-surface varies as the SINE of the Altitude.

Value of each Zone.	0°	Z	E	N	I	T	H	0	0
54.4 10°	11	10.4	9.4	8	6.6	5	3	1	0
167.5 20°	32.6	30.5	25	24	19.4	14	9	3	0
273.3 30°	56	52	47	41	33.3	24	15	5	0
387.9 40°	79	74	67	58	47	34.4	21.5	7	0
431 50°	88	82	75	64	52	38	24	8	0
507.3 60°	81	76	69	59	48	35	22	7.3	0
594.6 70°	60	56	51	44	36	26	16.3	5.3	0
104 80°	21	20	18	15	13	9	6	2	0
2100 Total	0°	10°	20°	30°	40°	50°	60°	70°	80° 90°

MANCHESTER ABATTOIR COMPETITION.

In February last the Corporation of Manchester offered three premiums of 150*l.*, 100*l.*, and 75*l.* for the three best designs for abattoirs and a carcass market proposed to be erected by the Markets Committee on a site between Water-street and the River Medlock. The results of this offer were to be seen last week in the Town-hall at Manchester, where a large number of designs submitted in competition were publicly exhibited. In a building of this class of course practical considerations are nearly everything, and against any tendency to attempts at architectural effect the committee guarded themselves in their "instructions" by the caution that "a plain brick elevation only is required." Glancing over the plans, then, in connexion with the instructions put forth, we must at once say unreservedly that there was a great deal of very bad planning evident among the drawings sent in; many of the plans having been devised without evidence of any adequate realisation of their actual working capabilities, so to speak, or of the objects to be kept in view in regard to the practical relation of the abattoirs to the market; viz., the provision for ingress of animals to the abattoirs, of rapid and convenient transference of carcasses from the latter to the market, and of ingress and egress of buyers to and from the market; these three branches of traffic, of course, requiring to be kept clear from mutual interference. Some of the competitors appear to have gone to work on their plans with a sort of indefinite idea that everybody will of their own accord keep out of everybody's way; and, could they see their own plans under operation, would very soon discover that "blocks" would occur, on a heavy market-day, in every direction; in one plan, and that one of the most carefully drawn and finished, the principal entrance avenue for animals actually crosses, at right angles, the only service transit between the abattoirs and the market. The plan of the site, we may mention, may be roughly described as a square, adjoined by a parallelogram of about half the area of the square. This conformation of the site has not unnaturally suggested to a majority of the competitors the main distribution of their plan; a considerable proportion of the plans showing the abattoirs and their appurtenances arranged symmetrically over the square portion of the area, and the market occupying the parallelogram. The disadvantage of this is that (in most of the plans so treated) the service from the abattoirs to the market is all concentrated at one point, and the route from the furthest of them to the market is long and circuitous, especially as in most of these plans the abattoirs are arranged in square blocks rather than in parallel rows.

In the two plans, signed "Utility" and "John Bull," to which the first and second premiums respectively have been awarded, this drawback has been avoided. In both these the market runs along a considerable portion of the Water-street front, occupying more than the length of the parallelogram, and less than its width; and behind the market, in a parallel row, are ranged the principal abattoirs, divided from it by an avenue, each abattoir having its own lair or pen in the rear for the reception of the live stock previously to slaughtering. The market is thus kept sufficiently apart from the abattoir department; and in the "Utility" plan a series of hanging-rails, with sliding tackle, is provided, crossing the avenue from each abattoir to a corresponding entrance through the boundary wall of the market; so that from all the abattoirs so placed the carcasses can be slung straight across into the market, with, as the author remarks, a great saving, both of time and the possible injury to the meat in a longer transit. The rest of the public abattoirs are ranged at one end of the market, and those which fill up the rest of the square area are intended for retail butchers, who do not require to use the market. The system of drainage in this plan is to have no drain carried from within the slaughter-houses or pens, but to make all these with a good fall to a continuous channel running along each side of the avenues which divide the buildings, and drained at proper intervals. This arrangement will save expense in drain-pipes and possible stoppages at junctions; whether it will insure the places being kept as clean as if each had a separate drain may be doubted. The walls of the abattoirs are to be lined with white glazed bricks, the best finish, probably, which could be given them to insure cleanliness; and

ventilation appears to be well provided for. The design makes no attempt at architectural effect, except in so far as pointed arches and voussoirs of different coloured bricks may be said to constitute this; but its appearance is sensible and purpose-like, and the building looks like what it is, without any pretence at being more than it is. This plan, of which Mr. Darbyshire, of Manchester, is the author, is, we understand, to be carried out; and it is satisfactory to be able to say that, on the whole, the first and second premiated designs appear to us to be, as regards practical and working merit, certainly the two best in the room. Whether the second premium design ("John Bull"), by Mr. Salomons, is not, in some respects, the best of the two may be doubted. One point it shows which we did not see in any of the others—a separate passage for diseased animals from the entrance (where they are supposed to be examined and condemned by the inspector) to the special abattoir set apart for them. Considering the highly contagious nature of some of the diseases to which cattle are subject, this is not unimportant; but in many of the plans, though the separated lair and abattoir required by the "instructions" are provided, they cannot be reached except by a circuitous route through the greater part of the premises. The second premium design is more ornate than the first, but also more expensive, the architect's rough estimate for the two being 16,000*l.* and 26,000*l.* respectively; and it appears from the local paper that the discrepancy of the estimates occasioned some remark on the part of the town council in deciding on the plans, but the city surveyor having examined them, and concluding that the plan of Mr. Darbyshire could be executed at "something near" the estimated cost, it was accepted. It is also stated that this plan was selected as the best by the sub-committee, the committee, and the butchers, before the estimated cost was known.

Among other plans exhibited, that of "Veritas" is very elaborately got up, and shows great attention to mechanical minutiae for facilitating operations, including a self-acting junction for transferring a load of meat from the main carrying rails in the avenues of communication on to branch rails running into the market, which, so far as we could make it out from a model and the author's not very concise explanation, seems ingenious, but a little too complicated for everyday use by rough hands. The plan in general is, however, unsatisfactory, the lines of intercommunication not being very well laid out, crossing the site where they should run longitudinally. "Nil nisi Bonum" (does this mean "nothing but bone"?) is a very finely got up set of drawings, showing the market occupying the chief portion of the square area, as a glass-covered central hall, of which a capital interior perspective view is given; but the author for this effect sacrifices ground as well as compactness and accessibility of plan; and as the market in this case is not for a miscellaneous crowd of buyers, but merely a depot for the supply of wholesale dealers in meat, the effect is not of so much importance as to counterbalance the loss of room involved to obtain it. The author gives an alternative plan, showing the abattoirs occupying the centre area and the market the parallelogram, but the first plan is evidently his favourite. In the plan marked "Carnival," the market is divided into two long and not very wide areas, each flanked by its row of abattoirs; this would be a good working plan as between the abattoirs and the market, but not so good as between the market and the buyers, for whom it would certainly be more convenient to have the market in one wide area, besides the additional facilities for ventilation in the market when so placed as to have one or more side adjoining the outer boundary of the buildings. The design signed "Barnabas" shows a more architectural effect in the exterior perspective than most of the competitors have attempted; and among others that are worthy of notice are "Devant si je puis" and "Nor nor east"; the latter (by Mr. Curzon), a very symmetrical plan, one of those showing the abattoirs and market quite separate on the site, but with better provision for intercommunication and transit than in some others of which the general distribution is similar.

Among other provisions required in the instructions issued by the committee are a separate pig slaughter-house and piggery, a boiling-house, residences for inspector and porter, assembly-room for the men employed in the abattoir, committee-room, &c. A shed is pro-

vided for the storage of blood, which it is proposed to contract with a company to take for chemical and manuring purposes. All these requirements appear to have been provided for in most of the plans. "A Competitor" writes to draw our attention to the "singular coincidence," by which all the premiums have fallen to Manchester architects. The people of Manchester have certainly shown a disposition, in competitions and otherwise, to favour the architects of their own city. This is not, however, altogether an unamiable weakness; and we have heard complaints from provincial towns of equal importance with Manchester, of prejudices far more unreasonable in an opposite direction, inasmuch that to be a "native," was enough to destroy all an architect's chances of favour from the corporation or citizens of his own town. With regard to the present case, it must be remembered that in a competition where practical considerations are of the first importance, architects living in the locality have necessarily, in their knowledge of the local details and customs, an advantage over strangers, who must count upon this in entering into such a competition. With regard to the third premium, we certainly do not see why the plans marked "Concilio et Labore" (a too favourite motto with competitors), by Messrs. Pennington & Bridgen, should have been preferred to two or three others that are in the room: the plan is rather wasteful of space, and its practical working is not very clearly indicated. But with reference to the two first premiums, we must say, after examining most of the other plans, that we do not see how the council could have come to any other decision, considering the designs, as they doubtless did, purely on their practical merits; and we think the architects of these two plans have fairly earned their place in the competition.*

THE VICTORIA EMBANKMENT.

GREAT efforts were made by the officers of the Metropolitan Board to have all things fittingly arranged for the opening of the northern embankment of the Thames by her Majesty the Queen on Wednesday last, and in a very short time they certainly did wonders. Indisposition unfortunately prevented the Queen from being present, but his Royal Highness the Prince of Wales and the Princess Louise represented her Majesty, and the whole affair passed off well, the arrangements being admirable.

Using official data, we may remind our readers that the Victoria Embankment, extending from Westminster Bridge to Blackfriars, is about a mile and a quarter in length; the total area of the land reclaimed from the river being 37½ acres, of which 19 acres are occupied by carriage and foot ways; 7½ acres have, under the Act of Parliament, been conveyed to the Crown, the Societies of the Inner and Middle Temples, and other adjacent landowners; and about 8 acres are to be devoted to the use of the public, as ornamental grounds. The Temples are restricted from building over their portion of the reclaimed ground.

The main roadway is 100 ft. in width throughout, and is divided into a central carriage-way, 64 ft. in width, with two footways; that on the land side being 16 ft. wide, and that on the river side 20 ft., along which is planted a row of trees at intervals 20 ft. apart.

The first Thames Embankment Act contemplated a solid embankment and roadway, 100 ft. in width, as far eastward only as the end of the Temple Gardens, the roadway thence to Chatham-place being reduced to 70 ft. in width, and carried on arches under which the river could flow to the existing wharfs. Subsequently,

* The following is a list of the several plans which were sent in for competition, together with the estimates:—"Devant si je puis," 65,391*l.*; "Labore et Concilio," 54,500*l.*; "Barnabas," 50,000*l.*; "Front de Bouf," 46,880*l.*; "Nor nor East," 46,270*l.*; "Carnival," 40,000*l.*; "Ad Rem," 39,000*l.*; "Economy," 38,000*l.*; "Revirevoco," 37,000*l.*; "Veritas," 34,000*l.*; "Alpha," 30,000*l.*; "A," 30,000*l.*; "Nil Nisi Bonum," 29,800*l.*; "Spero," No. 2, 18,000*l.*; "John Bull," Mr. E. Salomons, 27,000*l.*; "Spero," 27,000*l.*; "Front de Bouf," Messrs. Pennington & Bridgen, 20,417*l.*; "True as Steel," 26,000*l.*; "Industria," 26,000*l.*; "Volero," 23,000*l.*; "Credo," 23,500*l.*; "Bull's Head," 23,400*l.*; "Anchor," 22,151*l.*; "Cave Taurum," 21,000*l.*; "Omnia in Numero," &c., 21,000*l.*; "J. D.," 20,680*l.*; "34," 20,000*l.*; "H.," 18,500*l.*; "Hope," 18,000*l.*; "Concilio et Labore," 16,800*l.*; "In all Labour there is Profit," 16,000*l.*; "Utility," Mr. A. Darbyshire, 16,000*l.*

We have received a letter questioning the selection on the ground that a proper building cannot be erected for the sum named by the selected competitor. We do not think it necessary to print it.

however, the Metropolitan Board of Works obtained power to form this roadway of the full width of 100 ft., and on a solid embankment all the way to Blackfriars.

The approaches to the road as now defined will be from Westminster and Blackfriars Bridges, and from Whitehall-place, Villiers, Norfolk, Surrey, and Arundel Streets. An approach on a viaduct from Lancaster-place, Waterloo-bridge, passing through the ornamental grounds in front of the Adelphi, was provided for in the original Act; but this has since been abandoned with the sanction of Parliament.

As soon as the railway works are sufficiently advanced to admit of it, the main roadway from Westminster to Blackfriars will be extended to the Mansion House, thus forming one grand thoroughfare between the Houses of Parliament and the centre of the City.

The level of the roadway generally is 4 ft. above Trinity high water, except at the two extremities where it rises to Westminster and Blackfriars Bridges to an extreme height of about 20 ft. above high water.

Within the Embankment wall, and forming a portion of its structure is placed the Low Level Intercepting Sewer, which is an integral portion of the Main Drainage scheme, and above it is a subway for gas and water pipes, the dimensions of the subway being 7 ft. 6 in. in height, and 9 ft. in width; and the diameter of the sewer varying from 7 ft. 9 in. to 8 ft. 3 in. These are both situate under the footway next the river.

In connexion with the steam-boat pier at Westminster Bridge, a subway has been formed under the road to communicate with the subway previously formed under Bridge-street, which will afford an underground thoroughfare for foot passengers between the Houses of Parliament, the Metropolitan District Railway Station, the steam-boat pier, and the footways in Bridge-street, and those on the river and land sides of the Embankment roadway.

The Metropolitan District Railway, which, in consequence of its intimate connexion with them must be alluded to in any description of the Embankment Works, enters the land reclaimed by the Embankment at the Offices of the Board of Control near Westminster Bridge, and passes under the public road as far as Charing-cross steam-boat pier, where it diverges to the land side of the roadway to the Charing-cross Station, the roof of which rises above the surface, and is enclosed by screen walls of brickwork.

The contract for the construction of the Embankment wall between Westminster and Waterloo Bridges was let to Mr. Furness; of its continuation to the eastern end of the Temple, to Mr. Ritson; and of the remainder, thence to Chatham-place, to Mr. Webster, whose contract includes also the formation of the roadway throughout. The total cost of the works, when completed, is estimated at 1,200,000*l.*; and of the purchase of property and compensations at 450,000*l.* The whole of the works have been executed under the direction of Mr. J. W. Bazalgette, the Engineer of the Board, who has been ably assisted in the superintendence of their execution by the resident engineers, Messrs. Lovick and Cooper. The purchase of property and settlements of compensation have been under the charge of Mr. G. Vulliamy, the Superintending Architect of the Board; and the ornamental grounds are being laid out under the superintendence of Mr. A. McKenzie.

We shall have opportunities for more special observations hereafter.

THE DICTIONARY OF ARCHITECTURE.

ARCHITECTURAL PUBLICATION SOCIETY.

THE annual general meeting of the subscribers was held on Thursday, July 7th, at the Royal Institute of British Architects, Mr. C. C. Nelson in the chair.

Mr. Arthur Cates, before reading the report, announced the death of Mr. J. W. Papworth, as a loss which was practically irreparable.

According to the report, to complete the text of the Dictionary, it was estimated that about 2,600*l.* would suffice, and to secure this amount 160 new subscribers for complete sets, at 15*l.* 15*s.* each, were required. Of this number ninety-five have actually paid the whole or part of the subscriptions, seventeen others have undertaken to do so, and forty-eight only now remain to be obtained.

The balance-sheets show that all debts and liabilities which had accrued up to Lady-day last have been fully discharged, and that there is a

cash balance of 1,165*l.* 14*s.* 8*d.* in hand, and available towards the completion of the Dictionary; also, a further sum of 446*l.* 11*s.* 6*d.* will be gradually received by instalments, thus providing a total sum of 1,612*l.* 6*s.* 2*d.* to advance the text towards completion. To provide the further funds required, sixty-five copies remain available, which, when all subscribed for, will produce 1,023*l.* 15*s.*, which, it is calculated, will be sufficient to meet the further expenditure required.

It is of considerable importance that these few remaining copies should be appropriated with as little delay as possible; and the interest of every member is so involved in the thorough success of the work which has now so far favorably progressed, that the committee may with confidence anticipate that it will soon be possible to report that all the past years' works are out of print.

A considerable portion of the letter M has been printed off; the remainder is in type.

The Chairman having expressed his opinion that a very satisfactory state of affairs had been placed before the meeting, moved the adoption of the report and balance-sheet, which was carried.

Mr. Cates said it would be highly satisfactory if, in the course of the next year, the required number of forty additional subscribers could be obtained; and he thought they ought reasonably to be able to do that. At the time the completion of the Dictionary was uncertain, no doubt gentlemen felt a delicacy in asking their friends to put down fifteen guineas; but that was now entirely removed by the recent arrangements. He added there had been in the first instance a strong expression on the part of Sir W. Tite that his (Mr. Cates's) views were too sanguine; but they were very greatly indebted to him, for he had given most important assistance in many ways, and very much of the present success was to be attributed to his encouragement and support.

A special vote of thanks was given to the hon. secretary, for his active exertions on behalf of the society.

FIRES IN LONDON AND PARIS.

" 'There's a providence in it all,' said Sam.
" 'Of course there is,' said his father, with a nod of grave approval; 'what would become of the undertakers without it, Sammy?'"

WHAT a fund, not only of merriment, but of philosophy, truth, is there in the many pithy observations of the two Wellers! They have become as much a British institution as the sale of commissions in the army, or next presentations in the church, and are as familiar to Englishmen as railway accidents, paupers or poor-rates, or as any fire-brigade man in helmet and hose, the like of whom is unknown out of the British isles. Now, we are not about to venture on a word of disparagement against any sort or conditions of men, neither paupers nor curates, nor soldiers, nor firemen, nor any of the good things Englishmen cling to, and would do battle for in the face of the most "earnest" Government that could possibly sit at St. Stephen's. We believe in Samuel Weller's reflection, and would fain agree with Alexander Pope that whatever is, is right; for surely, if there were no paupers, what would become of the Poor-law Board? If there were no fires, what would be the use of firemen? And these last are worthy of sympathy from the least enthusiastic breast,—the honest fellows who are to be seen at all hours rushing through the London streets to the old familiar cry of "Fire!" so familiar that the man of business, hurrying along, hardly bestows a glance at the galloping horses, and the man of pleasure saunters calmly on, while a tragedy, enacted within stone's throw of him, is accomplished in a shorter time than is required to announce it in the papers under the usual formula; so familiar that policemen and bystanders, at the first alarm, take their respective positions with an aptitude and precision savouring almost of military discipline; so familiar, that the "upper ten" have at last made a fashion of it, and nobility comes in at the death, in quite a sportsmanlike manner, bewitching the world with noble firemanship.

It is the writer's fate to be numbered amongst those who inhabit a better built and more sumptuous capital, yet, nevertheless, yearn for the unswept streets of smoky London, revisiting them daily in the columns of the *Times*. They tell a melancholy tale—those columns—of fires and suffocation, destruction of property, and its heavy train of ills. In spite of the most

powerful fire-engines in the world; in spite of an admirably organised fire-brigade, the members of which are chosen for their intelligence and courage; in spite of the most adequate professional aid always at hand, and much amateur assistance given from many quarters, lives are periodically lost; men, women, and children are burnt to death or suffocated, unable to effect their escape from burning timbers, amongst which many firemen fall victims to the bravery and self-forgetfulness which distinguish the whole body. Their deaths are registered in due course, and the most satisfactory reports are drawn up, the tendency of which is generally to prove that everybody did his duty, and that nobody is to blame. But this can hardly be the opinion of men who know anything about building and the working of other Building Acts besides that of the metropolis, which, if we mistake not, was compiled by one or two clever lawyers who had read for the subject. Those who have thought about this constantly-recurring destruction of life and property in London are vain enough to believe that something must be radically wrong, and that somebody should be made responsible for it; and, if any, most assuredly the architects. But the profession are able to reply that they build fire-proof constructions when their clients will permit them to incur the necessary expense, and that they are responsible for these. The question is, however, whether a client should possess the right to build anything in a great city but a *bona-fide* fire-proof construction, and we add this qualification because more than one presumed fire-proof building in London has already succumbed to the flames. Here, in Paris, architects do not ask their clients whether they will have wood or iron floors to their houses, but build as experience and the acknowledged custom of the country propel them, and as the law directs. A French architect is responsible during ten years after completion for any errors or omissions in the works entrusted to his care; he is able to sue the contractors; but the client first sues him, and the brunt of the battle is generally borne by himself. In days when the insertion of the thin end of the wedge was a more difficult operation than at present, the Rev. Sydney Smith was wont to advocate the sacrifice of a bishop as the fittest preparative for reform, and we are sanguine enough to believe that the consumption by fire of a president or honorary secretary of the Institute would conduce to an amelioration in the present system of building practised by London architects, especially if the responsibilities of the latter were a little more defined by the Legislature, and the penalties attached to their calling a little more accentuated.

In Paris, a calamity like that known as a London fire is not of frequent occurrence; at least, we seldom read of such a thing, and still less seldom see it. But it is averred that there is no publicity in France,—a great mistake; for there is now so much publicity that even private life is hourly sacrificed to it. Besides which, a sensational piece of intelligence is quite as much appreciated by the Paris journals as by any *Daily Telegraph* or *Lloyd's Weekly Messenger*, and the story of a disastrous fire could be made, under skilful treatment, quite as telling as a wholesale butchery at Pantin or Denham. We repeat, that a house gutted by fire from basement to roof is a very rare sight in Paris; and, of late years, it may safely be asserted, a chimney on fire is the worst that happens to alarm the inhabitants of the new quarters of the city. Fires, though, do occur in many parts of the French capital, and were the houses built on the same model as those in London, the loss of life would be enormous, seeing that every Paris house contains on an average what would be considered in England six households, of more or less importance, not to mention stray lodgers in the roof or upper floor, and shops, stables, and coach-houses on the ground story. Every day accidents necessarily happen from the carelessness of one or the drunkenness of another; while the numberless flues required for the many houses contained, as it were, within one house, the *calorifere* with its ramifications of hot-air pipes, the ever-hot *fourneau* on every floor, the muslin curtains hanging to every window, the silk and chintz which cover the walls of the better-class apartments, all contribute to the risk of destruction by fire,—destruction, however, which seldom spreads beyond the limits of the apartment in which the fire occurs, as many instances suffice to prove.

Perhaps the secret, or rather the principal,

reason why there are so few really "disastrous fires" in Paris is to be attributed to the extensive use of plaster in the interior of all habitations. Plaster, besides being employed for all purposes to which lime and hair are applied in England, is used in the construction of floors, roofs, and staircases: these are *hourds* in plaster,—an operation little known beyond the walls of Paris. It is performed in the following manner:—The iron joists are fixed in the walls at a distance of 2 ft., or a little more, apart, and connected by iron bars, about half an inch square, hooked to the joists and laid consequently at right angles to them on a level with the bottom flange. On these bars, which are placed also about 2 ft. apart, long thin slips of iron, about three in number, are loosely arranged between the joists, and parallel to them. Here the smith's work ends, and that of the mason commences. Planks are temporarily attached to the under part of the floor, close against each other, forming, as it were, the ceiling of the room below. Rubble or hollow bricks or *plâtras* are then thrown on these planks until the whole space between the joists is filled throughout their entire height; liquid plaster is then run on, and soon finds its way between the rubble, binding it together and forming a homogeneous mass: so quickly does the plaster set, that in twenty-four hours the planks can be removed, and the ceiling and cornice completed. To fix the parquetry, small oak sleepers are required; these are laid upon the joists at equal distances, and set in plaster; the oak flooring is then nailed upon them.

Although the fronts of Paris houses are built of stone—and this is compulsory in the principal thoroughfares—staircase walls, when the stairs are of wood, and the rest of the work of similarly cheap construction, are sometimes built in *pan de bois*; but this strange contradiction is counteracted by the use of plaster. In such walls, and indeed in all framed partitions, the spaces between the rough oak posts, which are of enormous scantling, and covered with large nails, are filled up with *plâtras*, that is, blocks of old brick or plaster emanating from the demolitions of old buildings, and the whole is run and coated with plaster so effectually as to render it often difficult to ascertain whether a wall so built be of brick or wood. A wooden roof is treated on the same principle; purlins and any cross pieces of wood are enveloped in plaster, and this coating has saved, in our own limited experience, more than one roof from destruction. Besides the extensive use of plaster by every branch of the building trade, Paris may be said to enjoy its enviable immunity from fire by the universal employment of iron in the construction of floors; the substitution of oak for deal in almost all carpenters' and joiners' work; and last, though certainly not least, the custom of paving all kitchens, no matter on what floor of the house they may be found, all subordinate rooms, passages, and servants' bedrooms with earthen tiles, though of the commonest description.

To judge from the numberless fire-insurance speculations, fire-engines of every description, fire-escapes, more or less complicated, and the elaborate organisation of the fire-brigade, the British mind has, after a long and bitter experience, come to regard fires as part of the business of a great city,—a necessary misfortune out of which it is as well to derive as much good as it is possible to obtain out of evil. Londoners have acquired a morbid belief that fires are inevitable, and that to fall by an element which was created to destroy is only a natural consequence of human existence. It must be within the recollection of many that the *Times* correspondent, at the last Paris International Exhibition, terrified the Londoners by an appalling description of the wooden or rather pasteboard partitions which were being constructed by the exhibitors of every nation, and was thereby instrumental in burdening that over-quoted martyr, the British taxpayer, with the cost of stupendous iron doors to guard those picture galleries, which were said, let us hope erroneously, to contain the best examples of British art of that period, while the masterpieces of the modern French school were pieces of the modern French school were defended from the public and from fire by a woollen cord, thrown across the doorway, remaining thus, night and day, under the care of policemen and *pompier*s. The English authorities were, no doubt, right, though the French can hardly be said to have been wrong; each country viewing fires after its own fashion; to the former they are circumstances of every-day occurrence;

to the latter, accidents which are more easily averted by well-drilled and intelligent sentinels than extinguished by the skill and bravery of the most experienced firemen. The long story of London fires would lead almost to the supposition that as the facilities for saving life are perfected the number of fires increases; but herein lies a question to be answered by those more experienced than ourselves in the principles which serve to govern large communities: suffice it that it is an axiom of constitutional rule that a Government should do nothing for its children except at the very last extremity, when abstention would become a crime. The honest poor are thus driven to become paupers because only as paupers are they entitled to relief, and London is "protected" from fire only when the fire has betrayed itself, and the duty of putting it out becomes a public obligation.

Who, that watched the Parisian firemen at their ceaseless rounds in the Great Exhibition building of 1867 will doubt the excellence of their training and the working of a system which is founded on prevention rather than cure. The *pompier* is not the sturdy individual whose jolly features glisten as brightly as the helmet which covers them at so many a London fire. He does not command the respect of his countrymen; the fair sex neglect him, and, though sought after by an inferior order of *bonnes*, he is subject to the derision of small boys, and slightly regarded by the great society of domestics at large. His *pompes*, too, are not of a class likely to inspire respect amongst London firemen. No prancing steeds drag them at full gallop through crowds of busy people, to the imminent hazard of human life; while in country towns a procession of *pompiers*, attended by their *pompes*, is remembered with a smile, and elicits the oft-expressed hope that they may never be put to the test. Whatever credit is due to French firemen,—and Paris is under great obligations to them,—is owing to their vigilance; and an inspection of the great theatres and large public buildings, when full to overflowing, will bear out this assertion. Though Parisians are ignorant of those brightly-painted machines which cause so much delight to incipient youth in the English capital, though they possess no colossal fire-escapes to astonish the untravelled at all hours of the night, they, nevertheless, sleep undisturbedly, because, with them, "disastrous fires" are rare. They are content with the zeal of their firemen, but trust, with a higher wisdom, to the good materials employed in the construction of their houses, and the skill with which they are manipulated by the trained workmen of a regenerate city.

WILLIAM H. WHITE.

WHO VOLUNTEERS FOR PALESTINE?

WE are glad to hear that the committee of the Palestine Exploration Society have been discussing the desirability of having an architectural draughtsman as assistant to the engineers who conduct the operations at Jerusalem and elsewhere in the Holy Land. It is felt that the technical illustrations of buildings and constructions have been hitherto inadequately rendered. What they want is a young man well versed in his art, who should be able to make illustrations equal to those in the Count de Vogüé's charming works, and be able to discriminate between the different styles. He should be a fit companion in subordination to his chief. With the limited means at the disposal of the committee, little more could be offered him than would meet the expense of his outfit and support while abroad. His main remuneration would be found in the experience he would there acquire, the advantage of visiting foreign parts, and a certain reputation and connexion resulting from being associated with such an enterprise. At the same time he must be a young man well taught in his art; of amiable and obliging disposition; earnest, enterprising, of steady habits; and ready to work hard; above all, a gentleman. There must be several young men in the profession, sufficiently able, enterprising, and independent in their means, who would join such a project if the opportunity were offered them. Who volunteers for the new crusade? We are not in a position at this moment to say that such an appointment as we have alluded to will positively be made, but it seems more than probable, and the appearance of a likely volunteer on the scene would tend materially to bring about a realisation of the scheme.

AN OPPORTUNITY FOR ARCHITECTURAL STUDENTS.

MR. E. SHARPE, of Lancaster, has arranged to give a series of lectures to the members of the Architectural Association and others, at Lincoln, and on its neighbouring churches, during the last week in August. His object is to promote the practical study of the history of architectural art in England throughout the four centuries of its finest development, and he invites all who desire to have assistance in their endeavours to know how to see and study, and to record, describe, and draw what they see, to attend this meeting.

All pupils, therefore, of any practising architect in connexion with the Institute, Architectural Association, or provincial professional associations, will be freely admitted to those lectures and excursions, for which Mr. Sharpe is now making the necessary preparations at Lincoln.

We recommend such of our student readers as can conveniently manage it to take advantage of this offer on the part of one who is a thorough master of his subject.

THE NEW CHURCH AT ROATH, SOUTH WALES.

A NEW church has been erected and opened for divine service at Roath, at the cost of the Marquis of Bute. It is built on the site of the old edifice. The new church is in the Early Geometrical style. Its plan is a Latin cross, the chancel pointing eastward, and the nave, of course, to the west, with a north and south transept, and in connexion with the latter there is a chancel aisle and vestry. The mausoleum of the old church, in which several of the ancestors of Lord Bute are interred, is preserved near the north transept. The church is built of New-bridge stone in thin courses, with Bath stone dressings. The roof is of small green Bangor slates, supplied by Mr. Owen Davies, slate merchant, Cardiff. Each apex of the roof is surmounted with an ornamental carved cross. It is intended to complete the structure with a tower and spire, in the former of which a peal of bells will be placed. This is not yet commenced; but an estimate of the cost of construction has been given to Lord Bute, and it is now under consideration. The church has two entrance-doors, the principal one being at the southern side, approached by a porch, and leading into the southern transept; the second is at the west, and leading into the nave. The porch is ornamental. It has an open roof of stained wood, with circular arches and moulded ribs alternately, and a wooden cornice is supported by stone corbels. It is lighted by a two-light window.

The church is provided with sittings for 400 persons. The seats are all open, and of pitch pine stained and varnished. It is laid with a wooden flooring, except in the aisles of the nave and transepts, which are paved with plain black and red tiles. The walls inside are lined with white Tynmawr and blue Staffordshire bricks, and ornamented in bands, and with different designs, worked in with blue and the Bute red bricks. The nave and transepts are covered by an open timbered roof, the principals having moulded arched ribs, and being supported by carved corbels and capitals, and columns of Bridgend stone. Running around the walls just underneath the roof is a battlemented cornice with open tracery work above.

In the centre of the church the roof rises to the belfry floor, and the ceiling is octagonal in shape, and of wood, divided into a number of panels, with moulded ribs and carved bosses. The tower will rise above this, and will be supported by four arches which now span the nave, transepts, and chancel. The chancel arch is composed of five moulded ribs of alabaster, Radyr, and Bridgend stone in alternation. This arch is supported on double capitals, between which are columns of Bridgend stone, and the two upper ribs rest upon carved corbels. The arch spanning the nave is of similar design and construction. The arches of the transepts are plainer; except for the varied colours of the stone, and the moulding and carving. This portion—the body of the church—is lighted as follows:—At the end of the nave is a large four-light window, with moulded tracery at the head. There are two single-light windows at the north side, and one piercing the south wall. In each transept there is a large two-light window, with a rose-light above, surrounded by circular

hexagonal tracery. These windows are filled with stained glass of a diaper pattern, supplied by Sanders & Co., of London. It is intended to light the church at night by means of a large gas chandelier suspended in the centre of the building, and in addition there will be two burners placed in the chancel. The church will be warmed with hot-air flues by means of the patented apparatus of Mr. Perrot, of Bolton.

The chancel is divided from the nave by a screen, pierced with moulded panels of a cinquefoil pattern. The chancel is paved with ornamental tessellated pavement, supplied by Mr. W. Godwin, of Lugwardine. The chancel walls to the height of 9 ft. are lined with alabaster (all of which, with the exception of a small quantity from Staffordshire, was brought from Penarth), which is varied with stone from the Radyr quarry and the Forest of Dean. Above this the walls are of the same nature as those already described, except that they are ornamented in red and blue brick, with crosses in diamond panels. The chancel roof is of stained wood, arched, and divided into twenty-four panels, with moulded ribs and carved boxes at the intersections. A plain battlemented cornice runs all round. The stalls for choristers are of pitch pine, moulded and carved. The chancel aisle is divided from the chancel by a screen of six moulded and carved arches, composed of alabaster and Radyr stone, with columns of Bridgend and Mansfield stone, the capitals and bases being of a white flint from the neighbourhood of Stratford-on-Avon. Above the screen rise two arches, supported in the centre by a large octagonal column, with carved capitals, of Bridgend stone. The space on the south side of the chancel screen is intended for the organ-chamber. The chancel is lighted by a large east window, which it is expected will eventually be filled with painted glass by Lord Bute; it is a five-light window, with tracery of the Early Geometrical style at the upper part, and above this rises an arch, the vousoirs of which are turned with black and red bricks alternately.

The old church was razed to the ground some two or three years ago, and the erection of the new one commenced early in February, 1869. The whole of the work in connexion with its construction has been done by Mr. T. Williams, of Cardiff. Mr. J. T. Merson was clerk of works. The carving is from the hands of Messrs. E. Clark & Son, of Llandaff, who executed the sculpture work at Llandaff Cathedral. The total cost at present incurred in the erection of the church is about 6,000l. The architect was Mr. John Pritchard, of Llandaff, diocesan architect. Mr. Williams carried on the restoration of Llandaff Cathedral, and has recently completed two churches in London, and another in Yarmouth, besides several other large works in progress.

NORTHERN NOOKS.

THE CASTLE AND VILLAGE OF DOUNE.

WE must confess that it is getting every day more and more difficult for the poor artist or the wandering antiquary to pick up anything new in the course of his journeyings to and fro. We do not speak of the Continent in this case, although that is bad enough in these days of "excursionists." We never hear of or see a band of this modern peripatetic institution within 100 yards of our vicinity without unconsciously repeating Pope's famous and most expressive couplet:—

"Intrepid then o'er seas and lands they flew;
Europe they saw—and Europe saw them too!"

It was an excellent joke of Charles Lever when asked on one occasion by an Italian lady of rank who those curious English tourists were she saw going about the country in such equivocal guise, to answer, "Madam, they are unfortunate people rather affected in their brain, who are travelling for the benefit of their health under the charge of a keeper!"

Wandering some weeks ago through that picturesque region of the Scottish Highlands which is known to the Sassenach by the name of "the Troasachs," we cast anchor for two or three days at the village of Doune, which is situated in that neighbourhood, and lying on the verge of the south-west borders of Perthshire. Some notes we then made may bear to be written out,—more particularly since it was the only spot in the district that her Majesty did not overtake during the course of her Troasachian tour.

Of the village itself, however, we have very little to say that would interest architec-

tural readers. It is the property, we may state, at least in greater part, of the Earl of Moray; and is beautifully situated on the banks of the Highland river Teith. Doubtless, it is very pretty, particularly if seen from a neighbouring eminence; but, at the same time, it is very polluted, as most of these northern villages are. Nothing is more wonderful, in our estimation, than the simple fact of how long the spirit of progress is in reaching such romantic watering-places. Sanitary science there is almost unknown or recognisable. There are, no doubt, a few decent shops and houses in the main street; but as a general rule the cottages are miserably small, low roofed, and heavily thatched. They have no water supply excepting that which is derived from the contaminated river; or, worse still, surface water drawn from a soil of privies and ashpits by means of street wells; no drains but those which consist of stagnant open ditches along the sides of the village footpaths. As to anything of the shape of a water-closet, you might as well seek, as Diogenes did with his lantern, through the streets of Athens for an honest man! Such a sanitary innovation would seem to be a convenience and a necessity far beyond the requirements or even the conception of the primitive inhabitants. For these reasons among others it is that people who often leave the town for the pure air of the country, or at least in quest of the pure air of what Milton described as "the villages and farms," may find themselves miserably disappointed and mistaken. They will get a change of air in all probability; but whether it be a change for the better is a question we may leave for the present unanswered. Something was said to us in extenuation about the great difficulty of getting building fees—a circumstance which seems to be an inherent defect in all the systems of Scottish entails; but it is questionable, if even these facilities were more readily given, whether the knowledge of how to build healthy houses would be consequently forthcoming or put in practice. Such is not the case in larger towns in Scotland. Even the slender scavenger-work of the place is done by a very poor and underpaid official of the Poor-Law Board of the county; and the public wells of the town are all repaired and kept in working order by voluntary subscription!

The village of Doune, which was at one time famous for the manufacture of pistols, sporrans, skene-dhus, and other implements and accoutrements, much in demand by the warlike Highlanders, was direct beyond the region of Loch Katrine, and the pass of Lenny. No vestige of this trade remains. Even its once celebrated cattle-markets have been swallowed up by Falkirk trystes and railway transit. The great source of employment for its inhabitants is now found in the colossal cotton-works of Deanston, which have been the foundation, we were told, of several Glasgow fortunes. Towards these works we pass the river by crossing that ancient "Brigg of Teith," immortal in story, since it was erected—as the original inscription on the south parapet signifies,—at the sole cost of a tailor, one Robert Spittal, at the request of Margaret Tudor, the Queen of James IV., anno Domini 1535.

A good deal of fun has been made, at the expense of the shade of the said Robert Spittal, concerning this bridge: but let us compare this useful "foundation," and its chivalrous origin with the loose and indiscriminate method of endowing useless hospitals, which is still the fashion in Scotland, and we may then be prepared to place "Her Majesty's tailor" in rather a high niche among the list of public benefactors.*

Although Doune contains one of the best specimens of the enormous barn-like Presbyterian village churches which are so thickly spread all over Scotland; and although it is the largest "town" in the district, it is not of itself a parish. Kilmadock [? the Church of St. Maddoc] is the original and still the legal name and designation of the parish. The church, indeed, has long been in ruins; but the churchyard to which we made a pilgrimage, still lies about two miles westward from Doune, on the road to Callander, in a picturesque but lonely situation, overlooking the banks of the Cambusburn. We seldom have seen so solitary and deserted a cemetery. Smith, of Deanston, the founder of the cotton-mills, and the inventor

of subsoil ploughing, lies buried here; and Cupples, the amiable and warm-hearted clergyman of the district, reposes near the deserted and hoary ruins of the ancient church, under a neat marble tombstone, containing a touching and appropriate epitaph, which is due, we suspect, to the filial affection of his son George (the author of "The Green Hand"); and there are numerous old and curiously-carved horizontal slabs, with half-obliterated inscriptions, which record the virtues of the "Peers of Doune," for the last two or three centuries. Smith's epitaph runs thus:—"The grave of James Smith of Deanston, who died on the 10th of June, 1850, *ætat* 60. A man of science; an affectionate and beloved friend; and a kind and benevolent master." In addition to this, we are told, on the lintel of the tomb, which is enclosed with strong iron railings, that this burial-place was erected by James Smith, in the year 1838; that it is 10 ft. wide and 15 ft. long, and possessed of four layers.

To return, however. Our principal object, as we have said, in visiting Doune was to bestow such examination as we could afford to give to the remains of its celebrated castle. We do not suppose that we can add much to the formidable stock of lore respecting it; but a few personal observations may be allowed. It is certainly the most picturesque ruin of a castle, to our taste, in the whole of Scotland.

In the first place, we may easily discover that it is of great antiquity. It is obviously a mistake to suppose that it was founded by the Duke of Albany, as we are constantly told, in the early part of the fifteenth century. Sir Walter Scott, who was, of course, in many cases compelled to sacrifice historical accuracy to that splendid combination of the romantic and the picturesque which characterises his writings, seems to be the author of this belief. In one of his notes to "Waverley," he tells us that "Murdoch, Duke of Albany, the founder of this stately pile, was beheaded on the Castle-hill of Stirling, from which it was possible he might see the towers of Doune, the monument of his fallen greatness;" but this statement is not altogether accurate.

No doubt this Duke of Albany (created 1398) must have added greatly to the size of the castle, must have strengthened its fortifications and improved its architecture. But its original foundation is more probably due to one of the ancient earls or thanes of Menteith, the first of whom had that title conferred upon him in the year 1057. This view is supported by the fact that Doune lies in the centre of the Celtic district of Menteith; and it is therefore not improbable, in our opinion, that this ancient castle dates from the eleventh century.

An examination of the lower courses of the external walls shows us that these are all 10 ft. thick; indeed, in some places,—particularly overhanging the impetuous river Teith, which, at one time, may have washed round the embankment, the masonry is 12 ft. thick, and is chiefly composed of nearly every point of rough irregular and ill-built rubble, which contrasts with the regularly-built, hammer-dressed, and compact cornices above. The latter masonry also possesses all the solid features of squared and hewn quoins and lintels, which belong to the feudal architecture of a later age. In fact, there are evidences of various kinds of mason work, and, what is more, of different kinds of sandstone.

A good deal of importance has been attached to its site, which is well selected; and is even at this day extremely secure and commanding. Doune Castle stands upon a triangular promontory formed by the junction with the river Teith of the pretty mountain stream (now sadly diminished in volume) named, as we have mentioned, the Ardoch. It is thus inaccessible from two sides of its walls, while the remaining ground had obviously been intrenched, and the walls protected by a deep moat. Secure natural sites of this sort were seldom selected by the Norman nobility in Scotland, and were always the resort of the native chieftains of a former age. The Castle of Edinburgh, which is unquestionably built on a Celtic site, was considered impregnable before the invention of cannon. But look, on the other hand, at Caerlaverock, in Dumfriesshire, which is exposed on every side by land, and is also easily accessible through the shores of the Solway by sea! Indeed, the site itself, and its name, is at once suggestive of a very ancient period of warfare,—a period in which hill forts of the rudest construction con-

stituted alike the nucleus of the future fortress and the feudal castle.

The Castle of Doune, as its present remains indicate, consists of a compact quadrangle, about 106 ft. square. According to Mr. Billings, "the bastioned square tower of the fifteenth century is the ruling feature of the edifice; but the buildings are of various ages, and among them are circular staircase towers and remains of the angular turrets of the beginning of the seventeenth century." The square tower at the north-east corner is 80 ft. high, and still exhibits the crow-stepped gables which supported the roof. Of course, the entire roof is gone,—more than a hundred years ago. It has never been distinguished by any florid architectural decoration, such as we see in Stirling Castle, or in the interior quadrangle of Crichton, in Mid Lothian. A place of strength it has always been,—a strong fortress, in fact, at the immediate base of the Grampian Hills, and therefore of great strategic importance. Nevertheless it also possesses a certain air of departed grandeur and extinguished royalty, painfully recalled to our recollection by the flagstaff on the tower, which still, we believe, on some occasions displays the Royal Standard to the northern breeze.

The bartizans of the curtain and towers are still admirably preserved. One of the old grim gargoyles still projects on the northern front. The gateway, as well as the principal window openings, are constructed with very flat Gothic arches, although there are noble specimens of arches in the eastern flank of the tower. Curious narrow, oblique slits for shot-holes and the admission of light also line the staircase; and it is easy to observe, by a study of the masonry of the south-west wall, that it has been more than once effectually breached with cannon—most probably during the wars of the Commonwealth. The entrance is by an arched gateway on the northern front of the great tower; and the portcullis is still preserved. The portcullis is a curious example of interlaced and welded iron bars. Valuable lessons in iron construction and design are lying, unsought for and unheeded, in some of our rudest and most ancient buildings.

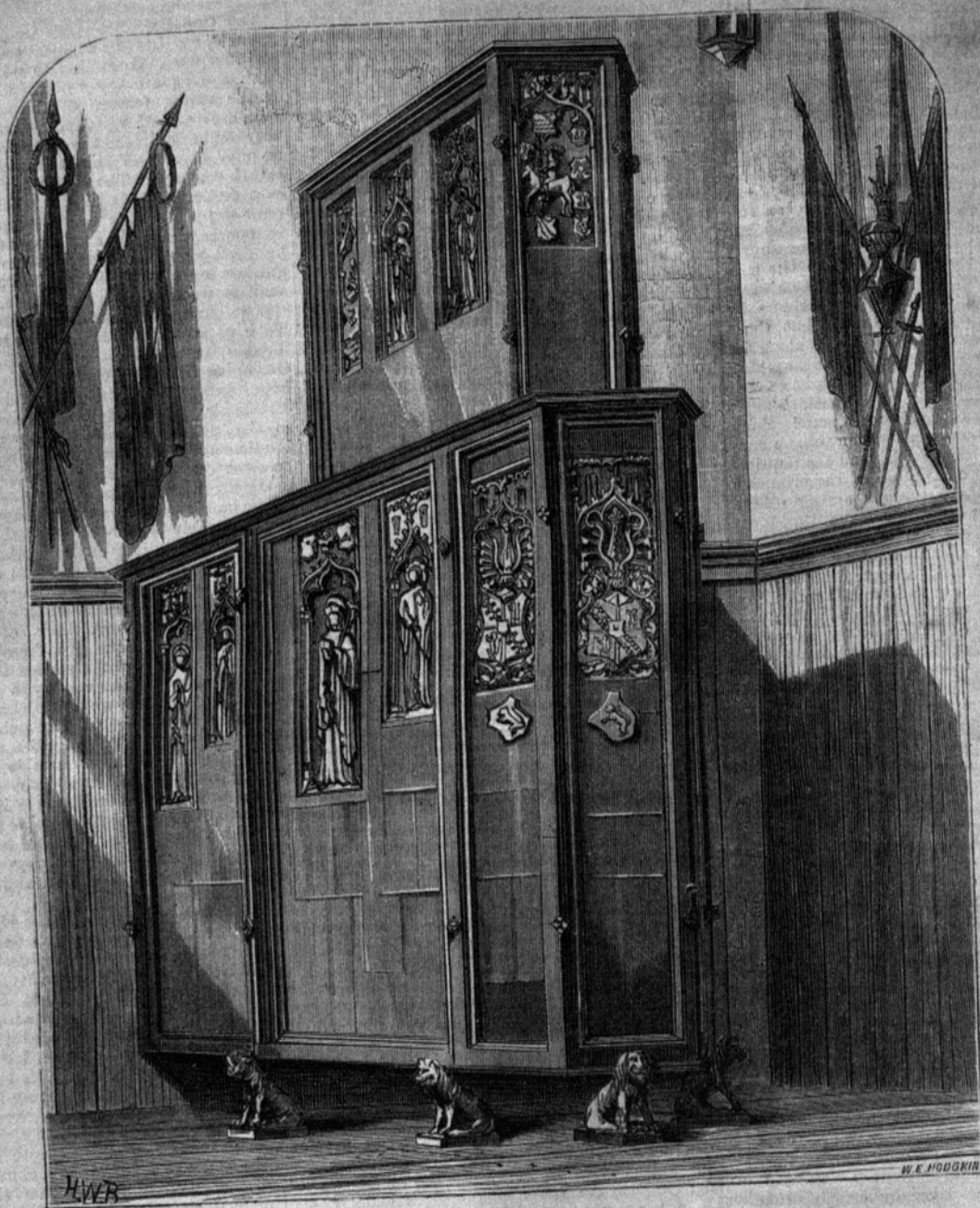
Inside of the gateway, on the right hand, is the old guard-house, which, by a dark entrance, is connected with a dungeon, designated the "Black Hole." This, it is clear, must have been for soldiers. On the left hand is the warden's apartment, which is also connected with an inner chamber, entitled the "Thief's Hole." This, we think, must have been intended for Highland caterans, or cattle-lifters. The remains of the great dining-hall, whose wooden rafters, we were assured, were built into certain stables and cow-houses of the neighbouring hamlet, measure 63 ft. in length by 25 ft. in breadth; and the great kitchen chimney is still to be seen, stretching from one side of the apartment to the other, immediately underneath the hall, suggestive of the days of oxen roasted whole, and of lambs spitted like grouse or black-cock! The baronial hall, where the lords and ladies held their state, is situated in the first story of the tower, a narrow staircase from which leads to the battlements. From this elevated point may be obtained an extensive survey of the surrounding country; and here, if he think proper, the visitor may get poetical or romantic! Here he may think of the ignoble treachery of the Duke of Albany, the chivalry of James IV., the sorrows of Queen Mary, the fate of the Regent Moray, and the adventures of "bonnie Prince Charlie," with all of which its history is identified. But the exquisite beauty of the scene and the grim ruins of the old castle itself will probably for the moment occupy his mind, to the exclusion of all other subjects:—

"Among thy woods grey turrets rear
Their heads in solitary splendour:
They braved the wrecks of many a year,
And only piecemeal yet surrender;
Though all their lords have bow'd to fate
And pass'd and left them desolate!"

This beautiful stanza, which occurs in a forgotten ode to "Scottish Freedom," written by Dr. Moir, the "Delta" of *Blackwood's Magazine*, some thirty years ago, precisely suggests the sentiment with which all students of nature and art, of whatsoever style, grade, or denomination, should view the ruins of the ancient and royal Castle of Doune.

It only remains to add that Lord Moray, to his infinite credit, is exceedingly careful of the castle; and his deputy, Mr. Macdonald, is not only an excellent archaeologist, but a celebrated salmon-fisher. This gentleman resides in a

* This ancient bridge, we observed, has recently been widened and repaired by the road trustees, under the direction of Messrs. D. & T. Stevenson, C.E., of Edinburgh. The roadway beyond still needs additional railing on the crest of the embankment.



ANCIENT CAST-IRON STOVE.—FIFTEENTH CENTURY.

very neat cottage hard by the gigantic sycamores of the ancient avenue, and the only inhabitants of the old castle that we could discover during our visit were a couple of milch cows browsing peacefully on the rich grass of its spacious court-yard.

ANCIENT CAST-IRON STOVE, COBURG.

THE stove which is the subject of our illustration is remarkable not only for its design, but more especially for the material in which it is executed. We have examined it most carefully, and there cannot be the least doubt that it is cast iron, and probably the earliest example in existence of the use of that metal. The casting is all of the very roughest description, and no attempt has been made to remove the marks of the castings. The same panels are used several times over, and in places where they did not exactly fit, they have been cut down in rather a barbarous manner. The figures are in slight relief, and the whole design is treated more like wood than metal. It is probable that the matrices were carved in wood. The intelligent custodian of the castle informed us

that the date of this stove was known to be 1472. We were unable to find any date ourselves, but this would answer to the style of ornamentation displayed in the canopies and other details. The arms displayed upon the stove are those of the house of Coburg, and are finely treated; in fact, they are by far the best portions of the whole work. The saints represented on various portions of the stove are the Virgin and Child, St. John the Evangelist, and St. Sebald (?). This singular relic of the Middle Ages stands in a hall scarcely less remarkable than itself. It is a perfect Mediaeval "Rittersaal," with a beautiful carved wooden roof, and is quite full of ancient armour.

THE NEW CHARTER-HOUSE SCHOOLS.

WE give this week a view of the New Charter-house School buildings now in course of erection on a most suitable site, of some sixty acres in extent, at Godalming, in Surrey, recently purchased.

The present schools, built for the Charter-house, at the time of their foundation early in the seventeenth century, are, on completion of the

new works, to become the property of the Merchant Taylors' School: so that they will continue to be used for educational purposes as heretofore.

In the foundation establishment, accommodation is provided for sixty boys, for two assistant masters, for a matron, and maniple. To this portion of the building are attached the school library and a common room for the masters.

The head master's and second master's houses have each been arranged for the convenience of fifty boys, and each is provided with private rooms for an assistant master and a matron.

The boys' dormitories are partitioned off into cubicles, only one boy occupying each; and there are in both houses private studies for the elder boys. The plan has been arranged so that additional masters' houses, dining-hall, &c., can be erected at a future time.

The chapel is designed to accommodate 400 boys, and the families of the masters and their servants. The houses and school buildings are connected with each other by open cloisters.

The building is faced with the rag stone found on the estate, part of the green sand formation. The dressings are of Bath stone.

The architect is Mr. P. C. Hardwick; and the contractors are Messrs. Lucas, Brothers.

THE NEW CHARTER-HOUSE SCHOOLS, GODALMING, SURREY.—MR. P. C. HANDWICK, ARCHT.

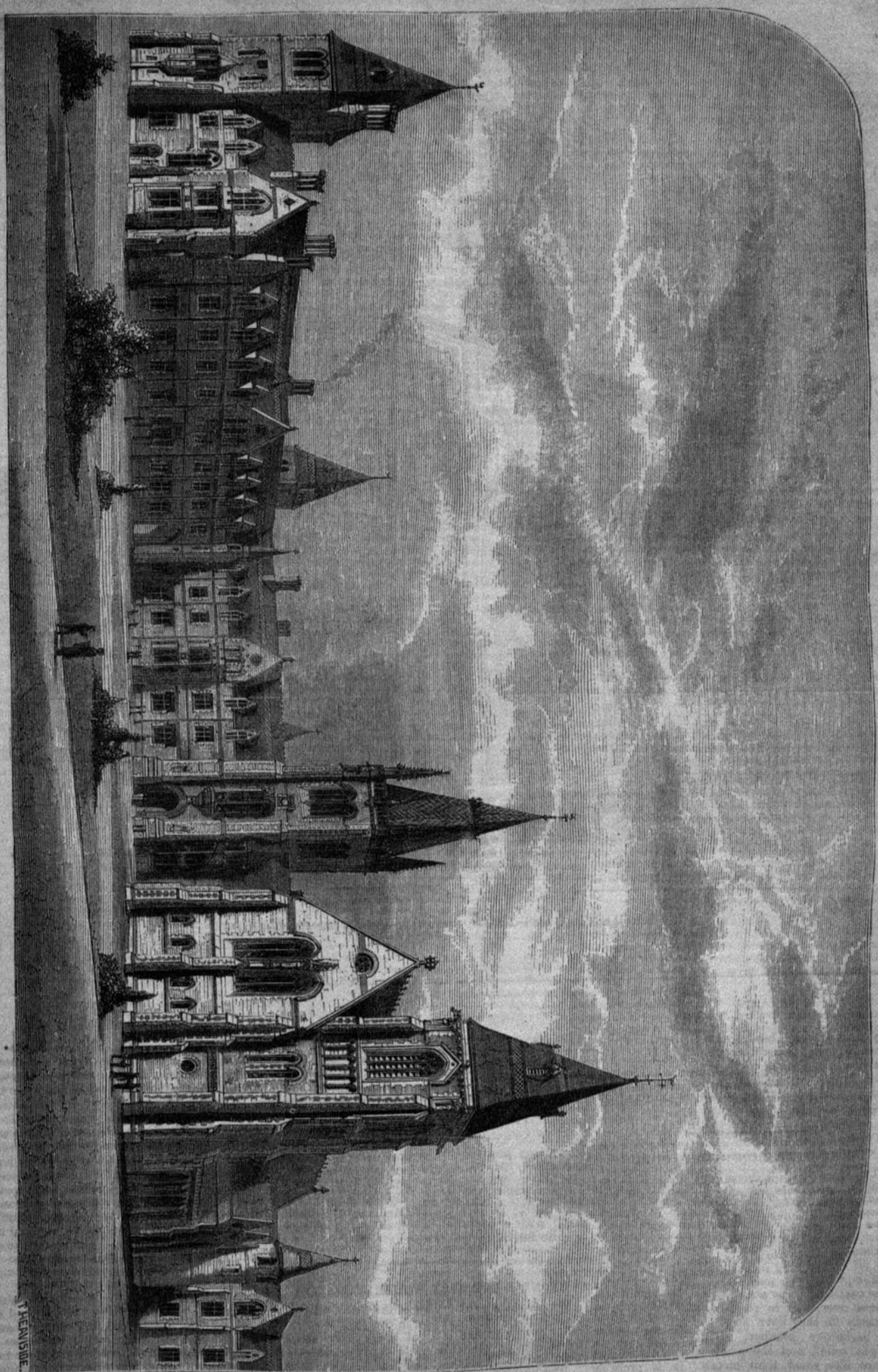


TABLE DECORATIONS.

At the last *fête* in the Botanic Gardens, in the Regent's Park, the table decorations sent in competition for the gold medal offered by H. R. H. the Princess Mary of Teck, attracted much attention. The gold medal was awarded to Miss E. Blair, 10, Spencer-road, New Wands-worth. It was graceful, but chiefly noticed for the idea it exhibited of concealing the pots of growing plants beneath the table, and of the plants growing in the midst of the other decorations. One of the second prizes was conspicuous from the plants of the centre ornament being arranged and blended with a handsome coral ornament. The plan of inserting flower-pots into the tables, so that only the flowers growing in them are visible, is one not at all likely to become general, necessitating, as it would, the cutting of tables and table-cloths; nor is it desirable that it should; in fact, it is a mistake.

On one of the tables was a large glass centre-piece, consisting of three receptacles for flowers, one above the other, the top one being filled with green, a small fountain springing in the midst, and casting tiny jets upon it; the lower ones consisted entirely of green leaves and white flowers. Two other equally large glass-stands, with white and green in the centre, had branches coming from the second glass, on which hung white glass tubes, with flowers in them, vibrating at every footfall.

A huge block of ice springing up from the midst of green ferns was in the centre of another table, surrounded by glasses, with one flower in each. This is a dangerous device. We have seen a lump of ice so placed descend into a fair lady's lap.

A centre-piece, filled with water-lilies and ferns, was as effective and in as perfect taste as any design displayed. This was exhibited by Mrs. Walter Fawcett, of Westbourne-street, Hyde Park, who has before now shown her artistic skill in similar competitions at the Horticultural Gardens. This work of hers at the Botanical certainly deserved a prize.

ARBITRATION v. STRIKES.

THE *striking* events which have taken place in Liverpool during the past two years are likely to leave a salutary effect upon the actors in them. The proverb "Once bit, twice shy," seems applicable. Both employers and employed have suffered so much, that all branches of the building trade, except the masons, are desirous of adopting a more rational plan than fighting it out whenever a difference arises. To this end it is proposed on both sides to establish a public court of conciliation and arbitration, whose decisions shall be final, and binding on all; and the chairman of the Master Builders' Association has been requested by representatives of the joiners, house-painters, bricklayers, plasterers, and plumbers to convene a mass meeting, for the purpose of forming such a court. It is to be hoped that by that time the masons will see the necessity of joining their brethren.

CORN EXCHANGE, MARK-LANE, COMPETITION.

AFTER nearly three months' deliberation on the part of the committee of the Corn Exchange, the award has been made. Thirteen designs were sent in by as many different architects in response to invitations addressed to them. Of these, the design of Mr. Stock, of Duke-street, London Bridge, has been selected; that of Messrs. Robert Hesketh and Thomas Henry Watson, of No. 7, Royal Exchange, and 9, Nottingham-place, London, has taken the second place; and Mr. Crossland's the third.

We have already given the names of the architects invited to compete, and some correspondence, on the part of one of them who declined to send in under the conditions proposed.

The committee having peremptorily refused admittance to any representative of the press, we give no account of the designs submitted. We had particulars before us last week, written by one connected with the affair, but of course declined to make use of them. When the competitors were examining the ground, one of the porters, we are told, said,—"I know who will get it; the architect who proposes to pull down the whole of the buildings in Seething-lane, and who does not mind how much money is to be

spent—he must go in for something bold to astonish them."

Whether or not this prediction has been fulfilled, we cannot say: committees, who take refuge in secrecy, necessarily expose themselves to damaging inferences.

THE COMING INTERNATIONAL EXHIBITION.

OUR art-workmen and manufacturers who are to be moved only by money considerations, if such there be, must look about them. We learn from a report made to the Belgian Commission by M. Corr-Vandermaeren that the delegate of the French Commission, with the hope that his countrymen will take a large share in these annual exhibitions, has secured a very considerable space in the Exhibition of 1871. But besides this,—and this is the remarkable innovation,—he has succeeded in obtaining authority to construct, at the expense of France, a spacious annex, which will cost, it is said, from 250,000 to 300,000 francs. This structure, separated from the principal building, is to be placed, by means of a gallery, in direct communication with the French departments. It is intended to receive, being put there for their sale, all the objects which the French exhibitors should wish to send there,—with this one stipulation, that the productions be of the same nature with those which shall appear in the place itself of the Exhibition. Every object sold during the day may be delivered to the purchaser the same evening, after the doors are closed; it must, however, be replaced by an article of the same kind the next day, before the Exhibition is opened. The exhibitors themselves are alone to be there for the sale of their productions in the annex. The English Commission has not only granted the authority solicited, but it has resolved to take measures to make it general, by according it to other countries who may wish to follow their example. The annex will become the free storehouse, where every industry in its turn will find a sure means of giving activity to and developing the sale of its productions, by opening relations with all the countries where English commerce is to be met with. M. Corr said afterwards, he had assured himself, with pleasure, that a great part of the iron employed in building the palace at South Kensington, will be of Belgian manufacture.

NEW STREET FROM THE STRAND TO HOLBORN.

THE line of street from Norfolk-street by the west side of Lincoln's-inn-fields, suggested in the *Builder* of the 25th ult., has been objected to by a correspondent, "E. B.," who points out another, as he says, and a much better line, viz., from the Embankment through Strand-lane, across the Strand by Newcastle-street, thence through Clare Market in line to Little Queen-street, and so across Holborn to King-street, there taking up, by a circuit, my line to the North-Western Railway.

Had "E. B." taken a view down Strand-lane, he must have seen that it was but 7 ft. wide, and turned off eastwards, at an angle of 20 ft. from the Strand; and that to have an issue on the Embankment, clear of King's College, five or six houses must be taken down at that end of Surrey-street; and also that if the line of Newcastle-street were made continuous, it must cut down more than one half of King's College, issuing at Somerset House, the terrace whereof must shoulder in the embankment angle of his new street. But, in fact, there could be no opening for it, as the lofty central portion of the College, together with the lower end of Surrey-street range, closes the line, and shuts off all the river view.

Across the Strand there is a curvature in Newcastle-street, which is only 30 ft. wide in the mean, besides that for about 150 yards there is a rise of 1 ft. in 20 ft. of its gradient. His proposed line might be cut from the junction of Stanhope and Houghton streets to Little Queen-street, in a straight line; but thence again, as a look at the Ordnance map will discover, there is a deviation by an angle exceeding 10 ft. from the north-west direction of Seymour-street and Woburn-place, at the point of incidence (Vernon-place).

The plan of new street given on the 25th ult. is at least a direct line; Norfolk-street and the west side of Lincoln's-inn are fine thoroughfares and ready to hand, and their propinquity to the

new Law Courts, the Temple, and the old Inn ranges, to which it would give direct access, would appear to make it more desirable than a narrow and tortuous line of streets, like those of "E. B." which are 100 yards farther off!

As to the question of expense, the "E. B." line of demolition from Newcastle-street to Little Queen-street would be longer by above 150 yards, and therefore more expensive, than the first proposed line, which would utilise Norfolk-street and Lincoln's-inn-fields. The purlieus about Clare-market might be much the same cost in either case, but, if at all practicable, the down line by Strand-lane must involve a disproportionate amount of outlay; for in fact it must have issue in Surrey-street to the Embankment.

"E. B." is mistaken as to the curve in a line drawn from Gate-street to Southampton-row. The line is drawn *direct* to Vernon-place. It is not, however, essential to the establishment of free intercourse between the Strand and Holborn that the proposed line should be carried further northward on its first inception. Long-acre, Great Queen-street, the theatres, and all that irregular network of streets between Covent-garden and Lincoln's-inn-fields must be at once relieved by such an open route; and the existing mass of dull shambles would follow in due course in the march of improvement.

THE SEWAGE QUESTION.

Sewage Utilisation.—The two bills for utilising the sewage of the towns of Blackburn, in Lancashire, with a population of 80,000, and of Reading, in Berkshire, of 30,000, which have been introduced by the respective corporations, have been passed by committees of the House of Lords. The Bills empower the corporations to purchase large tracts of land on which to utilise the sewage by irrigation, and were keenly opposed in the Commons as well as in the Lords. A very long string of witnesses appeared against them, but the evidence in support of the disposal of sewage in the manner proposed was deemed conclusive.

The New Sewerage Works at Hatfield.—The new sewerage works constructed in compliance with the requirements of the River Lee Conservancy Act, have been publicly opened. The works have been carried out under the direction of Mr. T. W. Grindle, engineer to the Corporation of Hertford, the cost of them being defrayed by rates, levied on the inhabitants of the Hatfield Drainage District. The Marquis of Salisbury, who will now take possession of the works, has agreed to keep them in repair for twenty-five years, on condition that the sewage is to be deposited on his land at Billett Common, to which place it will be conveyed by gravitation.

The Metropolitan Board and the Sewage Question.—Sir John Thwaites and about twenty-four members of the Metropolitan Board of Works have paid an official visit to Leamington, accompanied by Mr. Kents, the consulting chemist of the Board, for the purpose of inspecting what is called the "A B C," or alum, blood, clay, carbon, &c., system of treating town sewage. Sir John and the deputation were conducted through the sewage works by Messrs. Sillars, the resident directors of the Native Guano Company, and were accompanied by Mr. S. U. Jones, the chairman of the Leamington Board. The mode in which the "A B C" compound is mixed with the sewage was explained, the effect it has on the suspended matter in the sewage exhibited, and samples of the effluent water, after passing through the subsiding canals and a large sand and charcoal filter, were shown to the deputation. Specimens of the native guano extracted from the sewage were also exhibited, and particulars were given of its fertilising effects when applied to different crops. Messrs. Sillars, in reply to a proposal from Sir John Thwaites, stated on behalf of the Native Guano Company that they should be glad to allow an experienced chemist selected by the Board to have the supervision of the works for a fixed period, so as to afford the Board an opportunity of practically testing the system. Sir John intimated that in all probability this offer to subject the works to an independent and rigorous test would be accepted by the Board at an early date. We should have supposed the quantity of blood required for the metropolitan sewage to be utterly impracticable, but we observe, from *Land and Water*, that the quantity requisite (?) is something wonderfully homœopathic;—one part blood to 1,250,000 sewage water! Perhaps the power of the blood

goes on increasing as it becomes infinitesimally less in quantity! A few more letters of the alphabet, however, should be added to the "A B C;" since, according to the same authority, "for purifying the Hastings sewage, the following ingredients are used at a rough average, in the twenty-four hours: 30 cwt. of clay, 12 cwt. of alum, 14 lb. of blood, 28 lb. of sulphate of magnesia, 28 lb. of sulphate of lime, 28 lb. of animal charcoal, including a little sulphate of alumina, sulphate of iron, &c."

THE THAMES EMBANKMENT SITE.

ON a motion for going into committee of supply, on Friday, Mr. W. H. Smith moved that an address be presented to her Majesty, praying that she would be pleased to direct that no buildings be erected on that portion of the Thames Embankment which is reserved to the Crown, and which has been reclaimed from the river at the cost of the ratepayers of the metropolis. The hon. gentleman urged that as the ratepayers of the metropolis had paid for reclaiming the land on the north bank of the Thames it would be unjust for the Government to seize it in order to erect upon it some public buildings. The land was required for purposes of health and recreation by the public, and he appealed to the Government not to be so unjust as to deprive them of it.

The motion was seconded by Lord Enfield, and warmly supported by Mr. Baillie Cochrane.

The Chancellor of the Exchequer contended that the two acres and one-third were the absolute property of the Crown as trustees for the nation at large, and that if the ratepayers of London wished to keep it for their own recreation, all they had to do was to pay down 150,000*l.*, which was the estimated value of it.

Mr. Beresford-Hope and others also supported the motion.

Mr. Gladstone, in a very emphatic speech, insisted that the address was in flat contradiction to the law; and that if the House were to agree to the motion it would not be competent to her Majesty to issue the proposed direction. The object of the member for Westminster was tantamount to asking the Crown (which had only a life interest in the property) to give up land worth 150,000*l.* for an ornamental garden, for the maintenance of which a further demand would have to be made. He warned the House how it came to a decision which would form a dangerous precedent hereafter.

The debate was continued by Mr. Locke, Lord J. Manners, Mr. Cowper-Temple, and others; and the House became clamorous for a division, when the motion was carried against the Government by 156 to 106.

FALL OF A GRAND STAND AT CARLISLE.

WHILE the Cumberland Plate was being run for upon Carlisle race-course, a serious accident happened, resulting in more or less injury to a large number of people. Upon the rising ground, at the end of the straight part of the course, where the horses always finish the races, an enterprising speculator had erected a temporary wooden grand stand for the accommodation of any of the spectators who might choose to pay two-pence per head per race. It was 42 ft. long, and had upon it about twelve or thirteen steps, the depth from front to back being about 12 ft. or 13 ft.; it would stand about 7 ft. high in front, and 14 ft. or 15 ft. high at the back; and it was calculated to hold above 400 people. The weight of the spectators during the excitement of the race made the stand sway from its perpendicular position, and in a moment the whole structure fell with a loud crash, all the 400 people upon it falling with it. The number of people wounded and lamed by the accident is large, but many of them were taken away from the ground at once by their friends, or removed in cots.

The proprietor of the stand, says the local *Journal*, was Mr. John Little, coal agent, Bush Brow, in this city, who had employed a man named Hogg to construct it for him according to a plan furnished. The timber seems to have been strong enough for the purpose, the supporting pillars being 10-in. logs, and the supports 3 in. thick; but it had two radical defects. The main pillars had not been sunk far enough into the ground, they having only been inserted 2 ft. deep, and—what was really the fatal defect—there were not proper "stays" put in, so that

although there was strength enough to sustain a weight brought perpendicularly to bear upon the stand, yet when the structure began to sway, there was nothing to check it. Probably the wall against which the stand was placed helped to make the fall lighter; but the severity of the crash may be judged of from the fact that many of the thick supporting beams were torn asunder.

ARCHITECTURAL ASSOCIATION.

THE members of the Architectural Association and their friends dined on Saturday, the 2nd inst., at the Talbot Hotel, Richmond, Mr. Lacy W. Ridge in the chair. It was stated that the society now numbers over 700 members. Mr. J. D. Mathews, who has served the Association as honorary secretary for seven years past, has been elected one of the vice-presidents; and Mr. Thomas Henry Watson president, for the next year.

M. DE LESSEPS.

THIS gentleman has every reason to be satisfied with his visit to this country at the invitation of the Liverpool merchants. Since he came to London he has been fêted in various ways. On Monday in last week he was present at a banquet at the Duke of Sutherland's house, where his health was given by Mr. Gladstone. On Wednesday he was entertained by the Lord Mayor at the Mansion-house, where he made a graceful return for the awkward hostility of England to the canal by saying that although "the glory of making it belonged to France, the duty of maintaining it would be with England, who now pays, indeed, four-fifths of the dues." The City authorities are doing him further honour, and the Prince of Wales, as president of the Society of Arts, has presented him with the Society's gold medal, which the Prince said he had stipulated should be placed by himself in the hands of M. Lesseps. There has also been a fête at the Crystal Palace in his honour; and we learn from Ceylon that the idea of a substantial testimonial to him has been originated there, and will probably be seconded at Bombay. He will also be decorated, it is said, with the Victorian Order of the Star of India.

ARCHITECTS' CHARGES AND PROPERTY IN PLANS.

THE case, *Ebdy v. McGowan*, has been tried in the Court of Exchequer, Guildhall, London, before the Lord Chief Baron and a special jury.

Mr. T. C. Ebdy, of Durham, the plaintiff, is an architect, and the Rev. E. McGowan, the defendant, employed him in the preparation of plans, &c., for several churches and a parsonage. Defendant had paid 25*l.* on account, and lodged 100*l.* in court, disputing his liability for the remainder of the claim.

Mr. Seymour stated the plaintiff's case:—His client was instructed by the defendant to prepare designs and specifications, and to obtain tenders for a church to cost about 2,000*l.*, and did so. When the tenders came in, however, the defendant, according to the wish of his bishop, had determined to build two smaller churches instead, and this first church was abandoned. For his services plaintiff charged 3 per cent., being as per scale of charges of the Institute, and this formed the first item of his bill. Plaintiff then prepared designs for the second church, which was built, at a cost of 900*l.*, and for this he charged the usual commission,—5 per cent. He also prepared designs for two other churches not yet built, for which he made no charge whatever. The remainder of the account, as regards the churches, was made up of travelling expenses, stationery, postage, &c. He also prepared designs and got tenders for a parsonage to cost about 2,000*l.*, for which defendant hoped to obtain a grant from the Ecclesiastical Commissioners, and the drawings and specifications were sent to and duly approved by them with that view. When the tenders came in, defendant refused to allow plaintiff to proceed with the work, alleging certain neglect on his part as to the church, and demanded plaintiff's drawings and his account. Plaintiff sent in his account, charging 3 per cent. and expenses, as before, also surveyor's fees, but declined to surrender his drawings, as contrary to usage. Defendant refused to pay the account, disputing the correctness of the charges as to the churches, and denying his liability as to the parsonage altogether. He also refused a reference offered by plaintiff, and had a copy of the account printed for circulation among the clergy of the district.

Mr. T. C. Ebdy, the plaintiff, was examined at length by Mr. Bruce and cross-examined by Mr. Aspinall, and gave evidence in detail to the effect stated.

Mr. W. Fogarty, architect, examined by Mr. Bruce as to the usage of the profession, said, the ordinary charge is 5 per cent. for full service, besides travelling and other incidental expenses. Should the work be abandoned before tenders are received, the charge is 2½ per cent.; if tenders are received, 3 per cent. The surveyor for taking out quantities is usually paid by the builder who gets the work; but if the work be abandoned he is paid directly by the employer. In every case the drawings are the property of the architect.

Cross-examined by Mr. Aspinall.—In abandoned work the client has no right to the plans; they would be no use to him. In the case of a client dismissing an architect in order to employ some other, unless it was done by consent, he considered the plans should not be given up either. It was unusual and irregular for a client to dismiss an

architect till his whole work was done. The general rule is that the drawings are kept by the architect.

Mr. J. P. Seddon, hon. secretary of the Royal Institute of British Architects, examined by Mr. Bruce, gave similar evidence to that of the last witness. He would consider it most unjust for an architect to have to give up his plans, to be carried out by some one else, possibly to the injury of his reputation. The usage of the profession is set forth by the published scale of the Institute.

Mr. Aspinall stated the defendant's case.—As to the first church, he said, his client never wanted a north aisle to it at all, and before the tenders came in he had countermanded them. He therefore should not be charged commission on the north aisle, nor for getting tenders, as by the printed rule the tenders should have been procured in order to entitle the architect to the half per cent. for them. The item for the second church, which had been built at a cost of 900*l.*, his client did not dispute; it was all that had been built from all the plans for which this enormous sum of 241*l.* was charged. The travelling expenses, advertising, &c., were excessive. His client had distinctly advised plaintiff that he should look to the Commissioners, and not to defendant, for payment. His offer to pay was on condition that the plans be given up to him, which plaintiff refused to do; and, in fact, plaintiff expected to be paid without giving anything in return.

Chief Baron.—This seems to be entering on the question so recently agitated between the public and the architect of the Houses of Parliament.

Mr. Aspinall.—Not exactly, my lord; for there the work was finished, and the plans done with; but here the work was not even begun, and my client could do nothing without the plans.

Mr. Bruce.—It is really the same question, my lord; for if the client is not entitled to the plans when he pays 5 per cent., how can he expect them when he pays only 2½ or 3?

Chief Baron.—I shall not enter on that question here, but give the defendant leave, in case of a verdict against him on this item, to move to have the verdict reduced, or a nonsuit entered, as the case may be, should he be able to show cause before the full court. Had I known the nature of the case sooner, I would have ordered it to be referred.

The Rev. E. McGowan was then examined in support of the case stated by his counsel. He had declined to proceed with the parsonage because the cost slightly exceeded the proposed grant, and he was dissatisfied with Mr. Ebdy.

Mr. Sydney Smirke, R.A., examined.—It was the usual custom, he said, for the architect to retain the drawings; but in case of work abandoned, he thought the client had a right to them; also, if another architect were employed to superintend, as for works at a distance, as in the colonies, he thought the drawings should be given up also.

Chief Baron.—Never mind about the works in the colonies; tell us what is the custom in a case of this kind.

Mr. Smirke.—I think they ought to be given up, and in my own practice have acted accordingly. I never charged for stationery.

Cross-examined.—Knew the rules of the Institute, seldom attended their meetings. Had never subscribed any resolution to the contrary effect of the evidence given.

Mr. Aspinall addressed the jury for the defendant. His client, he said, had never authorised the north aisle, nor getting tenders for the first church. He was in no way responsible for the parsonage plans, which were to be paid for by the Commissioners.

Mr. Bruce replied for the plaintiff. He was sure the jury would be indignant at the defence set up as regards the parsonage, since it was clear, from the correspondence between defendant and the Commissioners, that he knew the latter would not be liable. The rest of the claim had been fully proved.

The Chief Baron then charged the jury. He did not see, he said, what answer had been given to the first item. It was clear the north aisle had been shown on all the plans, and the defendant must have known of it. As to getting tenders, if they thought these had been countermanded in time, they would disallow the half per cent. for this—about 10*l.*; if not, they should allow it. He thought the travelling expenses also proved. The item for postage and paper was controverted by Mr. Smirke; it was but a small one. As respected the parsonage, it was hardly to be believed that Mr. Ebdy would have done all this work without knowing who was to pay him. The Commissioners could not be called on to do so, and the defendant must have known this. If defendant had not dismissed the plaintiff, the work might have gone on, and he (the Chief Baron) hoped it would yet go on, as it appeared that the plans had been satisfactory both to defendant and the Commissioners. In the meantime they were called on to decide whether the defendant was liable or not, and certainly nobody else was. The surveyor's item could hardly be questioned, as the defendant himself, by not employing a builder, had prevented those fees from being paid in the usual way. The plaintiff, by not charging for several plans, had shown no disposition to be grasping towards defendant.

The jury almost at once returned a verdict for plaintiff for 100*l.* beyond amount paid into court,—being 10*l.* less than the full amount of the claim, leave being given to defendant to move the full court to reduce the amount, should it be of opinion that plaintiff was not justified in retaining the plans of the parsonage.—(Communicated.)

PREMIUMS AWARDED BY THE INSTITUTION OF CIVIL ENGINEERS.

THE council of the Institution of Civil Engineers have awarded the following premiums:—

1. A Telford Medal, and a Telford Premium, in books, to E. Dobson, for paper on "The Public Works of the Province of Canterbury, New Zealand."
2. A Watt Medal, and a Telford Premium, in books, to R. Price Williams, for paper on "The Maintenance and Renewal of Railway Rolling Stock."
3. A Watt Medal, and a Telford Premium, in books, to J. Thornhill Harrison, for paper on "The Statistics of Railway Income and Expenditure."
4. A Telford Medal, and a Telford Premium, in books, to T. Bopwith, jun., for paper on "The Dressing of Lead Ores."
5. A Telford Medal, and a Telford Premium, in books, to J. Nicholas Douglass, for paper on "The Wolf Rock Lighthouse."
6. A Watt Medal, and a Telford Premium, in books, to

G. Berkley, for "Observations on the Strength of Iron and Steel, and on the Design of Parts of Structures which consist of those Materials."

7. A Watt Medal, and a Telford Premium, in books, to R. Briggs, of Philadelphia, U.S., for paper on "The Condition and the Limits which govern the Proportions of Rotary Fans."

8. A Watt Medal, and a Telford Premium, in books, to E. A. Cowper, for paper on "Recent Improvements in Regenerative Hot Blast Stoves for Blast Furnaces."

9. A Telford Premium, in books, to John Grantham, for paper on "Ocean Steam Navigation."

10. A Telford Premium, in books, to D. Makinson Fox, for "Description of the Line and Works of the Sao Paulo Railway in the Empire of Brazil."

11. The Masby Premium, in books, to Emerson Bainbridge, for paper on "Coal Mining in Deep Workings."

The council have likewise awarded prizes to students of the Institution for papers.

TADCASTER WORKHOUSE COMPETITION.

SIR,—Can any of your readers inform me whether the Tadcaster Board of Guardians have come to a decision in reference to the new workhouse? Designs were to be submitted to them the latter end of March last. Surely three months are more than sufficient to decide this competition in.

COMPETITOR.

ARCHITECTURAL TEACHING AT THE ROYAL ACADEMY.

THE Royal Academy have decided to entirely remodel their Architectural School. Owing to want of space, the Academy have hitherto been prevented appropriating any special room exclusively for the teaching of architecture; but the removal to Burlington House has enabled them to build a class-room, 40 ft. by 31 ft., fitted up specially for that purpose. Mr. Phéné Spiers, a young architect of activity and intelligence, has been appointed the master of this class; and he has been instructed to proceed to Paris, (where he originally received his professional education) to make himself thoroughly acquainted with the present system of teaching adopted at the Ecole des Beaux Arts, not, certainly with any view to the rigid adoption of that system, but because it is the oldest and most completely developed school of architecture in Europe. An account of the system pursued there we have given on more than one occasion. The new arrangements at Burlington House will be ready for the opening of the coming winter season.

It is not very generally known, even in the profession, that the Royal Academy possess a collection of architectural casts which may safely be pronounced the finest classical collection of that nature in Europe; and no inconsiderable addition has been recently made to it of Mediaeval art-ornamentation. Owing to the unfortunately cramped accommodation in Trafalgar-square and other circumstances, these stores have never been made properly available; but the Royal Academy appear to have lost no time in remedying this evil in their new building. On a future occasion, we trust we shall be enabled to make known the whole course of study which it is intended to lay down for the instruction of students in architecture at the Royal Academy, and to make such suggestions as may seem desirable with a view to give it the greatest possible efficiency.

WATER-SUPPLY OF LINCOLN.

SIR,—Referring to the article on the "Condition of Lincoln," in your issue of June 11, the oolite rock with which the table-land is capped is about 30 ft. thick; the lowest bed is incrustated with oxide of iron, beneath which lies a deposit of ferruginous earth about 9 ft. thick, of a dark neutral tint, thickly interspersed with nodules of iron ore, pyrites, fossil shells, and petrified wood, the debris of which when exposed for some time to the weather gradually changes in colour to a reddish colour brown, owing to the action of the atmosphere upon the mineral salts it contains. Under this deposit lie the upper shales of the lias. The oolite is traversed by main fissures, from 9 ft. to 12 ft. apart, trending south-easterly, also by cracks intersecting these in irregular directions. Rain falling upon the table-land speedily penetrates the oolite, and is intercepted by the impervious lias beneath, and wherever a shaft is sunk into the ferruginous deposit water is obtained, the maximum depth being the surface of the lias. The supply can be increased by headings driven across the main fissures: this is contrary to the practice of the local well-sinkers, who prefer to follow the line of a fissure or "loss," as they term it, thereby saving the labour of cutting one side of the

heading, but only extracting the contents of one fissure instead of several.

Wherever these main fissures crop out on the hill-side, a flow of water is the result, the quantity of which depends upon the size of the outlet and the state of the weather. Hence some people say the wells are fed from the Trent, because when that river is high the wells are full; but the Trent flows through the marls of the new red sandstone at a far lower level than the Lincoln oolite. The rise and fall of both is owing to the same natural causes, and they have no connexion whatever with each other. The escarpment of the lias is covered with herbage, and has a peculiarly undulating appearance, caused by landslips at some former time.

The natural supply of water in the lower part of Lincoln is similar to that on the table-land, except that the medium of filtration instead of rock is alluvial sand, into which headings cannot be driven.

The artificial supply of water is in the hands of a company, who have a large lake or reservoir about two miles distant, whence the water flows to their works, where it is filtered and pumped into the city. The water company have on several occasions increased their buildings, the power of their pumping engines, and the number of their filter-beds, to meet the growth of the population, and they are now about to obtain additional powers for further accommodation to the public.

A LINCOLN HOUSEHOLDER.

MERTON, SURREY.

ON Monday last the foundation stone for the new National Schools at Merton, was laid by the Lord Bishop of Winchester. The new schools are the gift of the late Mr. Richard Thorne, of Cannon-hill, in the parish of Merton, who bequeathed 10,000*l.* for that purpose; they are intended to take the place of the present schools, which have become totally inadequate to meet the requirements of the parish.

The plan comprises boys', girls', and infants' school-rooms, with class-rooms attached to each; and also residences for a master and two mistresses.

The works are being carried out by Messrs. E. B. Gammon & Sons, the contractors, under the superintendence of Messrs. Aldridge & Willis, architects, of John-street, Bedford-row, whose designs were selected in a limited competition. The amount of the contract, exclusive of school fittings, is 2,650*l.*

THE PROPOSED NEW WORKS AT THE HOUSES OF PARLIAMENT.

SIR,—As you have described the steps proposed to be taken at the Houses of Parliament for providing new refreshment-rooms, may I ask you to be kind enough to publish the enclosed letters, which are necessary to enable your readers fully to understand the subject?

I should not venture to make this request if these letters had not been excluded from the papers lately promised to the House of Commons on the subject. Readers of Mr. Russell's letter without the context would perhaps hardly suppose it an answer to one on public business with which I had been officially intrusted by the present Government.

EDWARD M. BARRY.

"21, Abingdon-street, 22nd June, 1870.

SIR,—My attention has been drawn to a plan for new refreshment-rooms and a new conference-room, which is stated to have been prepared by Captain Galton, and appears to have been founded on a plan of mine, which, after several years of study and negotiation, had been approved by committees of both Houses of Parliament, as per reports enclosed.

This plan was forwarded by me to the Office of Works, last year, and laid before the committee of the House of Commons by the then First Commissioner of Works, and I gave evidence upon it by his request. After the committee had agreed on its report, the First Commissioner informed me that the general feeling of the committee was that detailed plans and estimates should be prepared in the recess, in order that at the commencement of the session of 1870 the House should have an opportunity of considering what should be done. He stated to me his intention of instructing me accordingly, and handed to me the plan, requesting me to retain it pending the receipt of such instructions. As three months were required, as reported by the committee, for the preparation of the drawings, quantities, and estimates, in order that no time should be lost, I proceeded at once to take all the necessary measurements, and to begin the preparation of the working-drawings for the whole design and for improvements in the ladies' gallery, being in daily expectation of receiving my official instructions. As, however, I was not been in any way further consulted in the manner I was led to expect, I now return herewith the plan originally forwarded, with my letter of July 29th, 1869, and returned to me by Mr. Layard.

You will perceive that it bears an official mark, 'with 3535-69,' which, I presume, refers to the date of its original receipt by the Board in 1869.

I should add, that in February last I was applied to on the part of the Marquis of Lansdowne for a copy of the plan; and, understanding that he required it for the public service, I at once prepared and supplied a copy, on the supposition that the Government still intended me to carry out my design. The copy was sent to his Lordship at the Treasury.

It has been with some surprise that I have observed that the plan recently laid before the Committee, and now submitted to the House, has apparently been copied in principle from my original plan, without any mention to the Committee of the circumstance. It is right, however, to say, that it contains the following arrangements, which are deviations from my proposals:—

1. A greater interference is proposed with the architecture of the waiting-hall than I had felt justified in advising. 2. The proposed serving-room is placed in one of the main corridors, and is unprovided with any external light or air. 3. The kitchen is placed in a different position, and is narrower and lower than I considered necessary. 4. The public entrance to the new Conference or Committee Room is by an ascent of five steps, succeeded immediately by a descent of five more. 5. The light of the ground-floor windows on the east side of the Peers' Inner Court is affected by columns placed in front of them, to carry a projection above of 71 ft. in width.

I may add that I informed the committee of last session that there had been no time to prepare accurate estimates; and that the amounts I had named to them for the several works, which referred to a much larger scheme than is now proposed, were only to be regarded as covering estimates which could not possibly be exceeded; and that I had every confidence that the work could be done for a less outlay, if carried out by tender, in the usual way. I may also state that this confidence has been fully justified by the more detailed calculations which I prepared last year, in anticipation of receiving the expected instructions.

I am, &c.

(Signed) EDWARD M. BARRY.

George Russell, Esq."

"H. M. Office of Works, &c., 20th June, 1870.

SIR,—I am directed by the First Commissioner of Her Majesty's Works, &c., to acknowledge the receipt of your letter of the 22nd inst. and its inclosure, relative to certain plans for alterations in the refreshment-rooms at the Houses of Parliament; and to state that, without admitting the accuracy of your remarks, the First Commissioner declines to enter into any discussion with you respecting the proceedings of this Office.

I am, &c.

(Signed) GEORGE RUSSELL, Secretary.

E. M. Barry, Esq., R.A."

TENDERS.

SIR,—In your last week's issue there appeared a letter signed "One of the Four," purporting to expose what he considers a job in the conduct of a competition for the erection of a house "a few miles from town."

The whole history lies in a nutshell. The quantities were badly printed. Some of the figures were indistinct, and an ingenious person, with an eye ready to pick holes in other men's coats, might quite as easily make out 33 rods as 22 rods.

*. In that case such "quantities" should not have been sent out.—E.D.

CHURCH-BUILDING NEWS.

Towdnack.—The *Cornish Telegraph* states that the old church of Towdnack has been restored. The chief works effected by the restoration are the erection of new roofs throughout the building; the insertion of new windows; together with other restorations of the fabric of the church. The nave and aisle have new deal seats; the chancel is fitted with new screens and oak stalls; the pavements throughout the church are new; that to the chancel has encaustic and other coloured tiles, with patterns in Portland stone. The architect, from whose design the work has been carried out, is Mr. John D. Sedding, of Bristol and Penzance; and the builders are Messrs. Bone & Son, of Liskeard.

Bampton.—The works at the church here are rapidly approaching completion. Mr. Bartlett has nearly finished his contract, and all remaining to be done inside is the seating, which is contracted for by Mr. Cowley, of Oxford, and the finishing the heating apparatus, partly laid some time since by Messrs. Bacon & Co., of London. Outside the church there yet remains considerable work to be done. The churchyard needs and must receive attention.

Shalford.—At a meeting of the parishioners it has been resolved thoroughly to restore the church, provided a sufficient sum of money be raised for the purpose. The chancel arch is to receive immediate attention, funds for its restoration having been already promised.

Newbury.—St. Dennis's, Stanford Dingley, has been re-opened for divine service, after a restoration, carried out by Messrs. Dove, Brothers, of Islington. The church consists of a chancel, nave, and aisles, with a small wooden tower. The only entrance is by a porch on the south side. Two new windows have been inserted in the south aisle. Four new buttresses support the north aisle. The outside walls have been newly faced with flints and Bath stone dressings, with the exception of the chancel. The church has been re-seated with benches of stained deal.

The chancel is paved with Gresley's tiles. The roof has been laid open, the materials being stained deal. The arches, with the piers in nave and chancel have been restored. While the work of renovation was proceeding, it was discovered that the edifice was decorated throughout with some wall paintings, portions of which are preserved. On the wall over the nave-arch is one supposed to be a representation of the Last Judgment. Above the arch in the north aisle is a painting of a sainted king, holding the sceptre and three arrows. On one of the pillars is a representation of Moses, with the decalogue. There are other signs of the antiquity of this church. The work occupied about three months, and the contract amounted to 700*l*.

Hinton Martel.—The Church of St. John the Evangelist, at the village of Hinton Martel, has been opened by the Bishop of Salisbury. The old church, dating, some parts of it, back to the fourteenth century, being very much dilapidated, was pulled down, and the new edifice occupies its site. In rebuilding it was determined to preserve such features of the old edifice as were fit and proper, and consequently the new church assimilates in style and character to that of the latter part of the fourteenth century. In length the structure is about 73 ft., by 34 ft. in average breadth. The exterior walls are built of flint, with bands of local green stone. The new windows, doorways, and dressings of Box-ground stone; the roofs covered with tiles and ornamental ridges. The edifice has a nave with north aisle only; and chancel with north chancel aisle, from which a vestry is screened off. The tower (Norman) is at the west end of the nave. The accommodation now provided is for 253, of which fifty-five sittings are set apart under the tower and west end of the nave for the school children. Internally, the walls are lined with white bricks, with bands of red brick, the Bath stone dressings being varied by brown and green stone. The walls are built hollow, so as to exclude damp. The nave is separated from its aisle by an arcade of four arches of Bath stone, moulded and springing from octagonal piers. The roofs are of open deal timbers, stained, and plastered between the rafters. The chancel has a richly moulded chancel arch springing from trefoil shafts. The floor is formed of Minton's tiles, the sacristy being laid with Minton's encaustic tiles. The carvings were executed in part by Mr. Bolton, but principally, that is the foliage work on the corbels, by Mr. Weaver, of Worcester. The chancel seats are of pitch pine. The benches in the nave and aisles are of deal, stained and varnished. A stained glass window has been inserted in the tower by Mr. G. H. C. Burt. It is divided into panels, with life-size figures of Faith, Hope, and Charity. The original drawings for the church were prepared by the late Mr. John Hicks, of Dorchester, but the work has been carried out under the superintendence of Mr. G. R. Crickmay, of Weymouth; Mr. A. H. Green, of Blandford, being the builder. The carving executed on the communion-table is the work of an amateur artist, Mr. E. Dacombe.

Nottingham.—The foundation stone of the new church of St. Andrew, on the Mansfield-road, has been laid. The site is just opposite the Church Cemetery lodge. The situation is commanding, and the tower and spire will be conspicuous objects. The plan of the edifice is cruciform, having a nave, north and south aisles, transepts, organ-chamber, and vestry. The entire length will be 130 ft. by 62 ft. broad. The cost of the building, including boundary walls and all necessary fittings, will probably be about 4,800*l*. The cost of architect's fees, the land, clerk of the works, and other items, will swell the total up to about 5,680*l*. Towards this sum donations have been promised to the amount of 3,272*l*, leaving a deficiency of at least 1,750*l*. The style of the structure will be Early French Gothic. The church was designed by Mr. William Knight, architect, and is being carried out under his superintendence. Mr. Haughton is the clerk of the works; and Messrs. R. Dennett & Co. (the builders of All Saints' Church), are the contractors.

Albury.—The parish church of St. Peter and St. Paul, in the village of Albury, has recently undergone extensive alterations, and as in the extension of the chancel the altar was moved, a re-consecration was necessary. This ceremony has been performed by the Bishop of Winchester. The arched head of the west door has been filled in with herring-bone brickwork, the nave has been furnished with open seats of red pine, and the vestibule of the church panelled with the same sort of wood. The centre, and two

side passages, are paved with Maw's encaustic tiles. The entire length of one side of the church is free, as is the south transept, both on the floor and in the gallery. The pulpit is by Mr. Earp, from a design by Mr. A. W. Blomfield, and consists of a red Mansfield base, with Caen stone frame, in which are alabaster panels filled with marbles of various colours. The whole is surmounted by a carved moulding. This pulpit is the gift of Lady Rokewood Gage. The chancel, which is separated by an oak screen from the nave, is ascended by three steps, and filled with oak benches for the accommodation of the choir. The encaustic tiles herein are the gift of the Duchess of Northumberland. The reredos is by Salviati, of Venice, and is the gift of Earl Percy. The organ in the chancel is of great compass, and was given by subscription, and built by Messrs. Gray & Davison, of London. A corona, the work of Messrs. Hardman, was presented to the church by the Rev. L. O. Bigg. The corbels and capitals are carved with emblematical subjects, noticeable among which is the holly, the badge of the Drummond family, by a member of which (the late Mr. Henry Drummond, M.P.), the church was originally built, and its restoration has now been carried out by his son-in-law, the Duke of Northumberland. The five windows in the chancel are the work of Mrs. Drummond, youngest daughter of Lady Rokewood Gage. Among them are the Crucifixion and the Adoration of the Magi. There is some glass in the nave from Mr. A. Gibbs, of Bedford-square. The church is slated with green and chocolate Bangor slates. The iron crosses on the transepts and west end of the nave were done by Mr. Poulter, of Albury. The architect was Mr. Blomfield; the contractor, Mr. B. Iakpen, of Abinger; the clerk of the works, Mr. Reavell; and the foreman, Mr. Puttock, of Shere. The alterations in the church have been accompanied by a considerable addition to the churchyard, the land for which has been kindly given by the Duke of Northumberland. The enclosing wall was built by a subscription among the parishioners.

SCHOOL-BUILDING NEWS.

Pimlico.—New schools in connexion with the parish of St. Michael's, Chester-square, London, have been formally opened by the Marquis of Westminster. The buildings have been erected in Ebury-square, on a site forming part of the Grosvenor estate, given for the purpose by the late marquis, and were designed by Mr. Thomas Cundy. The schools are built to accommodate 700 children, and there are three houses for the teachers. The marquis, at the opening ceremony, alluding to the changes in the neighbourhood, remarked that during his lifetime, even, the whole district had been built upon. His father was born in a villa upon the site of which the Millbank Penitentiary was now erected, and among the ditches there, he and his brother (Lord Ebury) used to shoot snipes. There was also a remarkable place in those days called "Jenny's Whim," a kind of tea-garden, which, they were told, "great numbers of people from London, both gay and sentimental," used to frequent, and where, if he was not mistaken, the gay were always in an enormous majority. That part was then a suburb of London. The parish now contained 10,000 people, and the population would soon be increased through the erection of a number of model lodging-houses, to which he desired to give the greatest possible encouragement. It was intended to continue Ebury-square up to Ebury-street, and to throw open the adjacent ground to the poorer classes. The plot of ground to the west of the schools would remain open to be available if required, and would only, at present, be affected by the erection of a drinking fountain, which his mother intended as a memorial of his father.

Constantinople to be Rebuilt by an Irishman.—You will be pleased to hear that steps are being taken to repair the loss caused by the recent tremendous conflagration at Pera, and that Mr. Quin, a native of the Queen's County, but for some years established as a contractor in the metropolis, has undertaken, in conjunction with some Belgian friends, to send out a staff of men, with ample plant, including sawing machines, to rebuild the portion of Stamboul destroyed by the late fire.—*London Correspondent of "Freeman."*—We are sorry to hear of another destructive fire in Stamboul.

FROM IRELAND.

Castlerock.—The new church at Castlerock, says the *Belfast Newsletter*, has been opened for divine service. The building is in the Early English style of architecture, and consists of nave, with apsidal chancel, north and south transepts, organ-chamber, robing-room, &c. Black stone, which is peculiar to the locality, has been extensively employed in the work; but this is relieved by broad bands of white Glasgow stone. A tower, in which it is intended to place one or two bells, rises from the north-west angle, and the spire is carried to a height of 95 ft., surmounted by a vane. The chancel is enriched by stained-glass windows, at the expense of Lady Bruce. A Caen stone pulpit has been presented to the congregation by Sir John Musgrave, bart., one of the members of the Clothworkers' Company. The building will accommodate about 200 persons. It is heated by means of a hot-water apparatus, procured from Messrs. Musgrave, Brothers, of Belfast. The pews and roofs are open, and of stained Memel. An organ has been procured for the church. The instrument cost about 300*l*, and was built by Messrs. Gray & Davison, of London. The entire cost of the church and fittings, as they now stand, amounts to about 3,000*l*. This sum does not include the parsonage that has been erected on an adjoining plot of ground. Sir H. H. Bruce, bart., gave the site free for ever, and the Baronet and Lady Bruce were also contributors to the building fund. The Clothworkers' Company, the Bishop of Derry, and others, also assisted. Mr. F. W. Porter, architect to the Clothworkers' Company, London, prepared the plans of the church; and, under the superintendence of Mr. William Hunter, architect to the Church Commissioners, they have been carried out by Messrs. George & Robert Ferguson, builders, Derry.

Books Received.

On the Application of Cast and Wrought Iron to Building Purposes. By SIR WILLIAM FAIRBAIRN, Bart., C.E., F.R.S., &c. Fourth edition, with additions. London: Longmans, Green, & Co. 1870.

In this new edition of a standard work there is a considerable amount of new matter, including a careful revision of the third edition, and an enlargement of the work. It now contains an experimental inquiry into the durability of wrought-iron beams and girders, the influence of the force of impact, and a long series of changes of variable loads affecting their ultimate powers of resistance. These researches are of high importance, when considered as a safeguard to the amount of load or strain to which beams or girders are usually subjected. In this edition there will also be found experimental researches on the properties of steel and homogeneous iron, to which the architect and engineer may safely refer; and as these investigations have reference to a material which may ultimately take the place of iron where security and strength are required, the author states that he has no hesitation in submitting it to the consideration of his readers. In an appendix is given a series of experiments on timber trussed beams, showing the comparative value between wood and iron in that form. It shows the principle on which wood and iron trussed beams should be constructed.

VARIORUM.

"The French Mind; or, Psychological Outline of the French Intellect and Character, for the Use of Students of French Literature." By Robert Harvey, B'es L. London: Trübner. This essay forms an interesting introductory chapter to a work entitled "The Masterpieces of French Drama translated and critically examined." The essay on the same subject, which it may be recollected appeared in the *Builder*, was written by a gentleman of the same family as the author of the essay under notice.—"Report upon the Influence of the Sewage Irrigation Works at Beddington on the Health of the Inhabitants of the Neighbourhood." By Baldwin Latham, C.E. Croydon: J. W. Ward. The medical officer of the Beddington district, Mr. W. E. Cressy, having reported to the Croydon Local Board that four deaths from fever in a house in the Beddington district, and other cases

of fever, were attributable to emanations from the sewage irrigation farm there, Mr. Latham, the engineer to the Board, has investigated the case as regards the state of the sewage, cess-pools, water, &c., and points attention to what he considers the true cause. He shows that the whole of the district requires immediate and urgent sanitary attention, as the sewer authorities have greatly neglected its sanitary requirements. Mr. Latham denies that the irrigation of sewage has had anything to do with the production of the fever.—*The Court Suburb Magazine*, edited by Miss Aikin Kortright, and which is now in its second volume, contains two poetical works above the usual run of such contributions; one by the Editor, in memory of Edward Julius Kuntze, a promising sculptor of New York, who was in England a few years ago, and will be remembered by some of our readers; the other, titled "Love's Counsel," by Miss Blanche Medhurst,—a charming conceit.

Miscellaneous.

Cumberland and Westmorland Archaeological Society.—A meeting of the members of this society has been held in Maryport. The chair was taken by Mr. J. P. Senhouse, of Netherhall. Mr. C. J. Ferguson called attention to a portion of the Roman wall near Pike-hill, between Lanercoast and Birdoswald. He suggested that the society should pay for the diversion of a road near the place in order to procure the remains. Dr. Bruce said that, so far as he could judge, the place referred to was the site of a Mile Castle; and further, it was a castle of considerable interest. There were three altars, one of which was at Lanercoast and two at Rockcliffe. It was desirable, therefore, to keep the site. The members and their friends, under the guidance of Dr. Bruce, proceeded to visit the Roman camp, and the field, not far distant from it, where the recent valuable find of Roman altars was made. The party next proceeded to Netherhall, the seat of Mr. J. P. Senhouse, near to which a pavilion was erected. At the front of the pavilion the whole of the altars recently discovered were placed, and numbered in the order of the finding. After the visitors had examined these interesting and valuable relics of a by-gone age, Dr. Bruce read a paper concerning them. He said that never before probably were the antiquaries of this district able to rejoice over such a sudden acquisition of treasure as they had before them to-day. Within a brief space, not less than seventeen altars had been exhumed on a spot of ground outside the camp of Maryport, and all of these, with a single exception, bear inscriptions which are distinctly legible. The newly-discovered altars, however, excepting that they supply us with the name of Marcus Maenius Agrippa, do not furnish us with a date, but he would venture to suggest that the latest belongs to the reign of Antoninus Pius. He thought, moreover, that they were buried in the spot where they had been found long before the abandonment of Britain by the Romans. The spot lies at the distance of about 350 yards from the Roman camp, which overlooks the modern town of Maryport in a northerly direction. The altars had been clustered together in a space somewhat circular in its character, and of about 60 ft. in diameter. After referring to the pits in which the altars were found; the persons by whom they were there placed; the inscriptions upon them; their form; and by whom they were erected, Dr. Bruce said on one important point these altars failed to give the information antiquaries had long desired,—that is, what was the Roman name of the camp of Maryport. The members of the Society were entertained at luncheon by Mr. and Mrs. Senhouse, after which it was arranged, according to the programme, that they were to drive to Papcastle and Dovenby, where a paper upon the Roman road from Maryport to Papcastle, by the late Mr. F. L. B. Dykes, was to be read, and traces of the road pointed out.

St. Nicholas's Church (for Mariners), Mauritius.—On Ascension Day, May 26th, the day after his official landing in Mauritius, the Duke of Edinburgh was present at the opening service of a new Mariners' Church. St. Nicholas's Church, Port Louis, is erected on the extremity of a jetty, from a design furnished by Bishop Hatchard, at a cost of about 1,800*l.* For many years, an old hulk had served both as a church and as a residence for the seamen's chaplain.

Four Men Suffocated in a Gas Tube.—At the North Staffordshire Coal and Iron Company's Works, Talke, Staffordshire, near the pit in which eighty men were killed by an explosion between three and four years ago, four men have been suffocated in a tube used to carry waste gas from the blast furnaces to the furnace boilers. The tube is 50 yards long, and 4 ft. 6 in. in diameter. It had been cleaned and repaired except some trifling matter, which three of them went down to do prior to the resumption of work. They were missed half an hour after they went, and search was made for them everywhere except in the tube, the last place thought of. The fourth had gone into the tube in search of the others, and was also missed. The three men who first went in were found lying as if asleep in the middle of the tube, and the last, who was also dead, was five or six yards from the entrance. The tube is placed horizontally, and has an entrance at each end, besides several holes in the plates along the sides. An air tube is alongside to supply fresh air to the tube, and there is also a shaft by which a strong current of air could be drawn through the tube, and all the gas taken away. Both these appliances were easily commanded, and if the men had been careful, they would not have met such horrible deaths.

The Countess of Huntingdon's College, Cheshunt.—The memorial-stone of a new building to be erected in celebration of the centenary year of this college, has been laid by the Earl of Shaftesbury. The building which forms the first portion of work contemplated by the committee consists of a rectangular block 121 ft. long, 26 ft. deep, and 3 stories high, having slightly projected wings at each end. On the ground floor are two lecture-rooms and six students' rooms, all entered from a corridor stretching behind. On the first and second floors are ten students' rooms each. At the west end of this range of building is the tower, containing on the ground floor the main entrance, and above two students' rooms. Behind this entrance are a lobby and the principal staircase. There is also to be a secondary staircase at the east end. The students' rooms will average 16 ft. by 11 ft. The work will be executed in brickwork with Bath stone strings, arches, plinths, and other enrichments. The architects are Messrs. Landers & Bedells, of London; and the builders Messrs. Dove Brothers.

Newspapers and Advertisements.—In the Sheriff's Court, Mr. Blacklock, of Georgiana-street, Camden-town, summoned Mr. Edward Lloyd, proprietor of *Lloyd's Newspaper*, for "damages for not inserting an advertisement correctly." The advertisement in question related to the sale of a house, and plaintiff averred that he had sustained a loss by "16 years' lease" being printed instead of "18." The defence set up was that the utmost care was taken to ensure the correctness of all advertisements, but that in the present instance it was impossible to determine whether the figure was a six or an eight. Mr. Commissioner Kerr, after inspecting the original copy, was of the same opinion, and at once gave a verdict for defendant, with costs. Advertisers should be careful how they write their advertisements, and reflect on the trouble and waste of time illegible writing causes.

Manchester.—The work at the new Town-hall is progressing favourably, the walls being now 3 ft. or 4 ft. above ground, and the masonry and execution admirable so far. The stone used is from Spinkwell,—a remarkably hard and close-grained sandstone. Will Mr. Waterhouse accept a suggestion? It is that the octagonal lantern on the tower should be raised. On the working drawing now on the ground the lantern, even in elevation, looks somewhat low and heavy in proportion, and, of course, in perspective, will appear more so. The comparatively bold detail of the Town-hall will, we fear, reduce Mr. Worthington's Albert Memorial adjoining to the appearance of an architectural toy, though a pretty one.—On the 6th of August the new park at Manchester is to be formally opened,—an occasion which appears to be considered of some interest by the inhabitants.

The Stone Trade.—We understand that at present this trade is very brisk in Yorkshire, large orders being in hand for both home and export. The most remarkable order is one for a very large quantity of stone for Peru, a considerable portion of which is being supplied from this neighbourhood.

Accidents.—At the inquest held on the bodies of the three men who were killed by the fall of a travelling-crane at the foundry of Messrs. Fawcett & Preston, Liverpool, and reported in the *Builder* last week, it was shown that the accident was caused by the parting of a cast-iron shoe fixed at the end of one of the longitudinal beams, for the purpose of trussing it up. A flaw was discovered in the casting; but whether it was an old one, or recent, could not be ascertained. The jury returned a verdict of "accidental death." In such a case as the above, where enormous strains are occasionally placed on moving parts, to be afterwards removed and left standing, a change in the molecular condition of the metal takes place, and it would be advisable to substitute steel instead of cast iron.

Hereford Congress: British Archaeological Association.—The programme runs thus:—Monday, September 5th, Address of the President, Examination of Antiquities in the City of Hereford, the Black Friars, Coningsby Almshouses, the Museum, Inaugural Dinner; Tuesday, Examination of Hereford Cathedral, Afternoon Excursion to Kenchester (Magna), and Credenhill; Wednesday, Excursion to Kilpeck, Abbey Dore, Rowstone, Groomston Castle and Church; Thursday, Excursion to Leominster, and thence by carriage to Monkland and Stretford, Dillwyn and Weobley; Friday, Excursion to Llanthony Abbey; Saturday, to Ledbury, Eastnor, Wall Hills, and the Herefordshire Beacon.

Great Increase of Fever in Liverpool.—The rapid increase of fever in Liverpool has created a feeling of alarm in the minds of the members of the select vestry of the town. It was reported last week that the parish Fever Hospital was overcrowded, there being twenty-three cases in it more than it was fit to accommodate; and that during the week one of the paid and thirteen of the assistant nurses had been struck down by fever. The governor reported that if it went on increasing, as it was likely to do, very large arrangements would have to be made in order to meet the unusual increase of cases.

Hexagonal Maps.—A simple scheme for easy identification of and reference to localities in maps has been invented by Mr. John Leighton, and was exhibited at the Institute *soirée* and the *conversations* of Sir E. Sabine. It consists merely in the hexagonalisation, if we may so call it, of the map, each hexagon representing a mile in extent, beginning with a central hexagon, and adding series to series round about it till the map is covered. By means of numbers and colours, or other indications on the map and on the street lamps, localities and distances could easily be ascertained.

The London Working Men's Clubs.—The Marquis of Salisbury has kindly given permission to the various metropolitan working men's clubs and institutes to make their annual excursion this year to the grounds of Hatfield Park. The marquis has also consented to grant the visitors the privilege of admission to his mansion and private gardens,—the visit to the mansion to take place at the commencement of the day's proceedings. The excursion will be on Monday, the 8th of August.

Window Gardening.—On Wednesday evening, the Duchess of Sutherland presided at an interesting ceremony, and distributed some seventy prizes to parishioners of St. Philip's, Clerkenwell, in the schoolroom, Anwell-street, Pentonville. These prizes were awarded for success in window gardening, and in industrial employments at home in leisure hours; an exhibition of window plants, and of the products of this industry, having been held in the school-room. These local exhibitions do much to maintain that love of home which it is highly desirable should be encouraged among the poor.

The Rockery in Finsbury Park.—A writer in the *Gardeners' Magazine* condemns the waste of money incurred in carting and cementing together the heap of kiln-refuse in Finsbury Park, dignified with the name of rockery. "It is much to be regretted that this park, which has been designed and laid out in such a tasteful manner, should be disfigured by what is nothing more nor less than a heap of mere refuse from the brick-kiln."

Proposed Science College for Norwich and Norfolk.—A committee has been formed for the purpose of making the necessary arrangements for calling a large city meeting to consider this important question.

Completion of St. Paul's.—The advertised public meeting in promotion of the fund for the completion of St. Paul's Cathedral was held at the Egyptian Hall of the Mansion-house on Wednesday, the Lord Mayor presiding. Amongst the speakers were the Bishop of London, Mr. Gladstone, the Earl of Carnarvon, the Bishop of Winchester, Mr. Gathorne Hardy, M.P., Mr. Walter, M.P., Mr. B. W. Crawford, M.P., and the Dean of St. Paul's. A list of subscriptions amounting to nearly 25,000l. was read.

A Lift and a Fall.—At the Clifton Down Hotel, Birmingham, four housemaids and a male assistant, all of whom were at the top of the building, entered a lift for the purpose of being conveyed to the ground floor. When the lift had descended to the fourth story, a cog-wheel at the top suddenly gave way, and the lift fell to the bottom with a tremendous crash. Two of the girls and the young man sustained fractured legs; but the other two, though severely, were not dangerously hurt.

Scotland.—Mr. David Thomson, architect, of Glasgow, has been employed by the heritors of Dalry parish to design their proposed new church. After examination of many churches lately built in and around Glasgow, they selected Eastwood parish church as their model, and have engaged the services of its architect, Mr. Thomson, to build them a new church, seated for 1,100, and designed upon the same principles.

Gift of an Hospital to Bolton.—The late Mr. Stephen Blair, who for the last sixteen years was provincial Grand Master of Freemasons for East Lancashire, has left 20,000l. for the erection of an hospital in Bolton, to be called the Blair Hospital, on condition that within three years a suitable site be purchased somewhere in the Bolton Union. A sum of 10,000l. has also been left for its endowment.

Drunkenness in Liverpool.—The fearful increase of Drunkenness in Liverpool has frequently been the subject of comment of late. One day in last week there were no fewer than 135 persons—71 males and 64 females—brought before the magistrates, charged with being drunk and disorderly in the public streets. Nearly 200 people were brought up for the same offence on the previous day.

Corn Exchange for Rochester and Chatham.—Tenders have been lodged for the erection of a new corn exchange. The number of tenders was very large, the lowest sum being, it is said, considerably above that fixed by the corporation for the erection of the proposed new buildings. The architects of the new corn exchange are Messrs. Flockton & Abbott, Sheffield.

Disgraceful State of a Cemetery.—The Dudley people are complaining, not without cause, of the condition of their borough cemetery. A portion of the wall is broken down, and the mounds of the dead are appropriated by the street urchins for various gymnastic sports.

Trade Dinner.—The artisans in the firm of Messrs. Pitman & Cuthbertson (late Hayward & Pitman), decorators, Newgate-street, had their twelfth annual dinner on Saturday last. It was held at the Rye House. The arrangements were under the superintendence of Mr. Carey and Mr. Roy, the two foremen of the firm.

Speaking Tubes in Churches.—A pulpit in a new church at Chicago is said to be provided with a copper speaking-trumpet, which is connected with eleven pews, where, with rubber hose and cup attached, the deaf may enjoy a sermon as well as those not so unfortunate.

TENDERS.

For erecting a new infirmary, for Wigan and the district, Mr. T. Worthington, architect. Quantities furnished by Mr. T. Taylor:—

Neill & Sons	£15,034 0 0
Wade, Brothers	14,890 0 0
Preston	14,772 12 8
Huish & Co.	13,960 0 0
Warburton, Brothers	13,860 0 0
Bridge	13,715 0 0
Fairclough	13,386 19 10
Wilson (accepted)	13,032 4 11
Higham, Brothers	12,868 18 0

For the erection of a dispensary, for the guardians of the parish of Hackney. Mr. W. Lee, architect. Quantities supplied by Messrs. Linsell & Giffard:—

Hill, Keddell, & Waldram	£5,678 0 0
Garrard	5,460 0 0
Wicks, Baugh, & Co.	5,393 0 0
Henshaw	5,360 0 0
Grabbie & Vaughan (accepted)	5,325 0 0
	4,781 0 0

For the erection of the floors over Nos. 300, 301, and 302, Strand. Mr. J. H. Rowley, architect. The quantities supplied by Mr. T. T. Green:—

Scrivener & White (accepted) ... £1,826 0 0

For building fire-brigade station, in Ladbroke-road, Notting-hill, for the Metropolitan Board of Works. Mr. E. Cressy, architect:—

Shurmer (accepted) ... £1,844 0 0

For the erection of a sisters' home and hospital, Mark-street, Finsbury. First portion of the works. The remainder to be based on the same schedule. Mr. J. Brooks, architect. Quantities supplied by Mr. J. Young:—

Perry & Co.	£3,229 0 0
Brown & Sons	3,225 0 0
Foster	3,198 0 0
Hill & Sons	3,148 0 0
Ashby & Sons	3,130 0 0
Longmire & Burge	3,062 0 0
Henshaw	3,067 0 0
Hill, Keddell, & Waldram	3,060 0 0

* Accepted.

For works, at 111 and 112, Whitechapel High-street for Mr. J. Gurney. Mr. G. Sparks, architect. Quantities supplied:—

Ashby & Son	£271 0 0
Couder	599 0 0
Hill, Keddell, & Waldram	598 0 0

* Accepted.

For alterations and repairs, at the Shoreditch Industrial Schools, Brentwood, Essex, for the guardians of the parish of St. Leonard, Shoreditch. Mr. W. Lee, architect. Quantities supplied by Messrs. Linsell & Giffard:—

Hill, Keddell, & Waldram	£1,377 0 0
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* Accepted.

For general repairs and new story to No. 13, Notting-ham-place. Mr. Northcroft, architect:—

Nutt & Co.	£493 0 0
Shepherd	350 0 0
White	340 0 0
Perrin, Brothers	334 0 0
Winship	322 0 0
Scott	257 0 0

For new front, and entirely refitting the ground-floor, bar, &c., at the One Tun, Chandos-street, Strand, for Mr. W. H. Lappin. Messrs. G. Knight & Pickering, architects:—

Langmead & Way	£744 0 0
Elms	699 0 0
Terry (accepted)	598 0 0

For two shops, in Houndsditch, for Mr. D. Davies:—

Dover	£2,257 0 0
Tully	2,189 0 0
Blackmore & Morley	2,050 0 0
Cole	2,139 0 0
Rudkin	2,125 0 0
George	1,987 0 0
Whitaker	1,972 0 0
Heath	1,969 0 0
Pyne	1,945 10 0
Pearce	1,925 0 0
Stocks & Tidy	1,900 0 0
Langmead	1,899 0 0
Thomas & Co.	1,890 0 0
Building Company	1,769 0 0
Gurrin	1,783 0 0
Perry, Brothers (accepted)	1,760 0 0
Hurst	1,749 0 0

For Presbyterian Church, Clapton. Messrs. J. Tarring & Son, architects. Quantities supplied:—

Myers	£5,632 0 0
Richardson	5,622 0 0
Pitman & Fotheringham	4,993 0 0
Kilby	4,983 0 0
Hill & Son	4,950 0 0
Dove, Brothers	4,635 0 0
Shepherd	4,583 0 0
Luscombe	4,585 0 0
Shurmer	4,444 0 0
Browne & Robinson	4,378 0 0
Henshaw	4,112 0 0

For two houses, semi-detached (one with shop), at Southend, Essex, for Mr. Z. Warren. Mr. T. Goodman, architect. Quantities not supplied:—

Ingham	£1,175 0 0
Cushing (Enfield)	1,040 0 0
Cushing (Southend)	1,040 0 0
Grover	927 0 0
Smith	898 0 0
Saunders (accepted)	888 0 0

For erecting a house, &c., in Falcon-lane, Clapham Junction. Messrs. D. Haylock & Son, architects:—

Blackmore	£299 10 0
Shillito	298 10 0
King	295 10 0
Gibson	277 0 0
Spinks	273 0 0
Barrett	260 0 0
Cooper	250 0 0
Antill	245 0 0
Ward	224 19 6
Boon (accepted)	220 0 0

For Christ Church, Clapton. Mr. W. Wigginton, architect:—

	Brick	Stone
Myers, Brothers	£6,953	£7,048
Howard	5,847	6,483
Henshaw	5,795	6,520
Kilby	5,790	6,275
Dove, Brothers	5,575	6,125
Axford & Whillier	5,565	6,020

* Accepted.

For three pairs of cottages, and three pairs of lodges, at Nuthurst, Sussex, for Mr. R. Henderson. Mr. Dibble, architect:—

Sharp	£3,768 0 0
Barclay	2,767 0 0
Hamblyn	2,764 0 0
Putney	2,280 0 0
Dewdney	2,614 0 0

For additions to house, &c., Rose-hill, Dorking. Mr. Dibble, architect:—

	Well, Pump, &c.
Inkpen	£250
Putney	589
Lynn & Dudley	580
Hamblyn	540

For alterations and decorations to No. 28, Eaton-square. Mr. H. Ford, architect:—

Lawrence & Sons	£1,182 0 0
Brass	1,152 0 0
Shaw	1,100 0 0
M'Leachian (accepted)	1,086 16 0

For completing the erection of two semi-detached villas, at Brentford-road, near Kew, for Mr. C. Clayton. Mr. T. W. Cutler, architect:—

Hurst	£1,650 0 0
Whiting	1,491 11 0
Moore	1,249 0 0
Archer	1,235 10 0
Peck	1,226 5 0
Cawdon	1,192 0 0
Littlejohn	1,166 0 0
Holding & Dickins	1,125 0 0
Swain & Hall	1,098 0 0
Lacy	1,029 0 0
Hoare & Cleland	1,015 0 0
Hennings & Son	985 0 0
Leaver	859 0 0
Warr	832 2 10

Arrived too late.

Bowler	1,596 0 0
Taylor	1,425 0 0
Shirley	1,167 0 0
Horne	1,068 0 0
Stocks & Tidy	1,047 0 0
Hobson	853 0 0

For alterations to premises, 5, 6, and 7, Fenchurch-street, for Mr. Kine. Mr. N. B. Joseph, architect:—

Newman & Math	£4,768 0 0
Myers & Sons	4,625 0 0
Ashby & Horner	4,490 0 0
Brass	4,390 0 0
Hill, Keddell, & Co.	4,360 0 0
Browne & Robinson	4,255 0 0
Henshaw	4,272 0 0
Couder	4,266 0 0
Perry, Brothers	4,217 0 0
Ashby & Sons	4,229 0 0
King & Sons	3,989 0 0

For the erection of an additional story, &c., to No. 90, Sloane-street, for Mr. Briggs. Mr. J. Bradbury, architect:—

Leggett	£267 10 0
Whittick	261 15 0
Hill	250 0 0
Richardson (accepted)	239 0 0

For works in additions, &c., to the Olive Branch, Earl-street West, for Mr. S. Headon. Mr. J. Bradbury, architect:—

Slade (accepted) ... £56 10 0

Congregational Church, &c., Stamford-hill.—We are told the list sent to us was not correct. Messrs. King & Sons' tender should have been stated at 12,778l. and that of Mr. Kilby, 12,480l. We must beg correspondents to be correct.

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The Lords Commissioners of the Admiralty, having determined TO DISPOSE OF THE EASTERN PORTION OF WOOLWICH DOCKYARD, invite TENDERS for its PURCHASE.
All particulars may be obtained on application in writing, to Lieutenant-Colonel ANDREW CLARKE, R.E. Director of Works, stating name, address, and description of applicant.
Admiralty, Spring Garden-terrace, London, S.W. June, 1870.

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The estate is the key covered by forests of the most valuable timber, chiefly composed of mahogany, cedar, fustic, and lignum vitae.
The concession has been obtained for thirty-one years, in which time the Company will have the right to cut the timber of 30,000 acres, and export the same.
The grant of the concession is to be paid chiefly by royalties, one month after the sales have been effected in England, or in such countries as the Agents of the Company may from time to time think fit to consign. The grant of the concession is to be paid as follows, viz.:—
10,000 in 4,000 fully paid-up shares, and 2,000 in cash, making together 12,000; and the following royalties, viz. 13s. 6d. per ton during the concession of 31 years upon all mahogany, cedar, lignum vitae, and fustic sold, and 1s. 6d. per ton upon all underwood sold.
The facilities for cutting, working, and transport of the timber from the various navigable rivers are easy and inexpensive, and the limit given will far more than cover the real outlay.
Minute calculations and detailed reports have been made of the value of the different descriptions of woods by the Wood-Brokers, Messrs. Churchill & Sim, of Clements-lane, upon a cargo of wood cut from the adjoining estate, and imported from Puerto Cabello, in June, 1869.
The following is an estimate of the first cost, freight, and export charges, viz.:—

	PER TON.
Cutting and Shipping.....	£1 5 0
Freight.....	2 0 0
Royalty.....	0 12 6
Dock Landing and Lifting Charges.....	0 2 6
Measuring.....	0 2 0
Brokerage and Guarantee.....	0 2 6
Discount, Auction Charges, &c.....	0 4 0
Total.....	£4 13 6

The above calculations have been made at the time of highest freight, the selling price of 4s. per foot super for Mahogany, taking the specific gravity of 430 feet to the ton, is equal to 61.13s. 4d. per ton, and is the lowest price which has been realised for some years past in the most depressed markets.
Upon the most unfavourable view that can be taken, the Company can at the worst time realise a net profit of about 11.13s. 10d. per ton, but it can be calculated with great certainty that much larger profits may be realised, and this is borne out not only by the favourable reports given by Messrs. Churchill & Sim, but also by Messrs. C. Vincent, esq. F.R.S., and R. James, esq. late Secretary of the Central American Association, Limited, long resident in Venezuela.

From the increasing demand it is calculated that a ready and remunerative sale for 5,000 tons per annum, can be effected of mahogany alone; this would in itself, at the calculated and anticipated profit of 11.13s. 10d. per ton, realise about 49 per cent. upon the capital, at present proposed to be called up.
Messrs. Churchill & Sim have reported in most favourable terms upon the mahogany, cedar, fustic, and lignum vitae; and if cut and shipped according to their instructions, they could now make contracts for forward delivery. The price obtainable for the cedar at the present time would leave a profit of at least 40 per cent. above that realised by the mahogany.
The original contract entered into with the grant of the concession with the agreed form of the deed of concession, to be executed by the Company, together with copies of the memorandum, articles of association, and other papers, can be inspected at the Office of the Solicitors, Messrs. COCK & TALBOT, No. 4, Raymond-buildings, Gray's Inn, W.C.

The reports of Messrs. Churchill & Sim, Mr. Moses C. Vincent, and Mr. R. James can be had, together with prospectuses and forms of application, at the Office of the Company.

The Builder.

VOL. XXVIII.—No. 1433.

The Stature and Bulk of Man in the British Isles.



HAT is the average height of an Englishman? Only people who know nothing of the details involved in the consideration of this question will, probably, reply to it. What is the average height of a Scotsman or of an Irishman? The same difficulty in giving a satisfactory answer will be felt in the case of these queries, too. It may be urged that these are questions of trivial consequence, and therefore not worth while either to ask or answer. But this would be an erroneous view. A knowledge of the average stature of the able-bodied men of these islands

should govern the regulations relating to enlisting in the army. It would enable us to determine, also, whether, as a nation, we do not require more physical training than we get to enable us to keep our place among other nations as the possessors of strength, size, and physical energies; and it would enable us too, to judge, if not now, at some future time, whether what we consider evil agencies, such as overcrowding in towns, working in confined postures, the immoderate use of tobacco and alcohol, &c., have any appreciable influence upon stature.

The president of the Anthropological Society, Dr. Beddoe, has recently been at the pains to endeavour to ascertain the stature and bulk of the men, between twenty-three years of age and fifty, in the British Isles, and the result of his observations has been printed in the *Memoirs of that society*. He fixed upon the limits of age mentioned, because at the age of twenty-three man is believed to have attained his full stature, and at that of fifty to enter into the period of the decline of life. His investigation involved a great labour and a persevering persistence, and was opposed, in some instances, by the most curious prejudices. In Scotland, for instance, proprietors thought it waste of workmen's time to allow them to be measured, and fishermen and others were superstitiously afraid of the ceremony. In Ireland, some Tipperary "boys" actually ran away on the application being made to them. In Wales there was an impression that the proposition involved ultimate shipment to foreign parts; and in England there was frequent stupidity to contend against. The plan pursued by Dr. Beddoe was to forward to country doctors and other scientifically-educated persons, willing to take a little trouble for the interests of science, a formula to be filled up, requiring surname, age, birthplace, occupation, height, weight, and colour of eyes, of as many men between the ages mentioned as each could

examine. More wholesale statistics also helped out his researches, such as those furnishing the stature, bulk, &c., of the inmates in our county lunatic asylums, and the official recruiting statistics of the War Office. His object for asking for names was to ascertain the extent of migrations that have taken place since they became general, as of Welsh into Liverpool, Highlanders into Glasgow, Cornishmen into Devon, &c.

The mass of information gained is of the most curious description; indeed, to look over it is like looking into an immense crowd, and taking down the personal particulars and individual history of every one in it. It is so minute, and at the same time so diffuse; so concrete and yet so separate and scattered, that we can only refer readers interested in the subject to it. The commentary made by Dr. Beddoe upon the facts he has gathered together, is, however, so lucid and ingenious, that we must give an outline of it. He divides England and Wales into five districts, based upon the character of the industrial pursuits of the inhabitants, one being manufacturing, another mining, a third rural, a fourth more strictly agricultural, the fifth being the metropolis. Scotland forms a sixth district. This is his general summary for Great Britain:

Occupations.	Number.	Average Stature. ft. in.	Average Weight. lb.
Miscellaneous out-door...	174	5 7-66	142-11
Clerks, &c.	242	5 7-28	136-74
Masons, &c.	100	5 7-13	139-12
Labourers	834	5 7-11	140-36
Ironworkers	269	5 7-08	137-07
Woodworkers	270	5 6-91	142-06
Bakers	34	5 6-91	138-21
Miners	67	5 6-89	134-40
Tailors and shoemakers ..	135	5 6-77	132-53
Miscellaneous, in-door...	335	5 6-57	138-72
Grooms	101	5 6-57	138-72

When the individuals yielding these figures are sifted into their respective districts, the average height and bulk of the various workers comes out differently. Without going through all the occupations, we may explain that in the Sussex group the labourers stand next in height to those engaged in miscellaneous out-door occupations; while in Kent these last fall below clerks, miners, labourers, wood-workers, those engaged in miscellaneous indoor occupations, and even grooms. Again, in Kent the thirty iron-workers measured are nearly at the bottom of the list, as far as stature is concerned, whilst in Lancashire and Yorkshire the forty-nine representatives of that industry head it. These differences are explained by various suggestions. The iron-workers are to some extent picked men, because in some processes so much exertion and endurance of heat are required that none but strong youths adopt that branch of industry. In some counties, where the agricultural labourer is ill paid, the tall young men enlist, and so reduce the average height of those left on the soil; and in the neighbourhood of the metropolis there is a special opening for strong tall men from the surrounding districts as railway porters, draymen, excavators, &c.

The lunatic and criminal returns show the curious fact that lunatics and criminals are on the average shorter than sane and honest men; also that dark eyes and black or very dark hair are more common among lunatics than in the general population. Scottish criminals are taller than Scottish lunatics and English criminals; and these last are below the average lunatic in stature and weight. Town-bred criminals are strikingly inferior to country-born criminals.

The private returns are, however, of a more pleasant interest; and the unravellings of the respective influences of race, soil, climate, and mode of life are very suggestive. Roughly speaking, says the president of the Anthropological Society, after assorting his figures, the natives of Scotland and of the north and north-east of England exceed in stature those of Wales and of the south and west of England; except of course, notably, in the people of some of the large towns and of some of the Hebrides in

the northern division, and in those of Cornwall and the Scilly Islands in the southern. The Highlanders are tall and bulky. The Lowlanders of the ancient Norse district of Caithness, considered by former observers as the finest peasantry in Britain, come out in this scrutiny as no bigger than their neighbours. The Edinburgh and Glasgow townsmen are considerably smaller. The tallest men in Britain are found in Galloway, and the heaviest in Berwickshire. The Borderers equal or surpass the average both in Scotland and England in both respects. The Danish counties, Lincolnshire, Nottinghamshire, Derbyshire, and Leicestershire, excluding the manufacturing towns, produce men rather high in stature. Norfolk can boast of both stature and weight, especially in the Danish settlement of Flegg. Suffolk can boast of weight only. The Isle of Ely produces tall men; but the southern part of Cambridge, like the south-midland counties generally, can show but an undersized population. The native Londoner stands very low in the scale of stature.

In the matter of weight, too, there is some peculiar information. Some Irish statistics show a remarkable uniformity in the several classes of returns relating to the weight of Irish peasants and labourers, which uniformity can only be attributed to the absence of corpulent persons. The average weight of an Irish peasant may be estimated at 138 lb. The average weight of an Englishman is calculated at 145 lb.; and that of Scotsmen at 10 lb. higher.

Foreign observations brought to bear upon these show that the 380 Gloucestershire men examined by Dr. Beddoe and his friends average exactly the same height, and as nearly as possible the same weight, as the average adult inhabitants of Brussels. And the average weight of 40 Frenchmen, ascertained by Tenon, in 1783, is found to leave considerably less difference in favour of the southern Englishman than might be supposed from the popular belief in the superiority of the latter. The author accounts for the grounds of this prejudice by showing that it was British and French, or foreign, soldiers that were generally compared; and as the Continental regulations admit men of much less height into the army than ours do, it will be seen that those in our ranks will appear to represent a larger race. In France only 77 per 1,000 are excluded by size from enlisting. In Northamptonshire 210 per 1,000 are excluded because they are less than the regulation height of 5 ft. 5 in. In other counties there is a larger proportion; and in Herefordshire 417 persons out of every 1,000 are ineligible for want of sufficient stature to come up to the present regimental idea of a soldier. Twenty Icelanders, weighed and measured for the purpose of this inquiry, yielded an average stature of 5 ft. 8-5 in., and weight of 156 lb.

Looking at the facts in a comprehensive light, Dr. Beddoe finds a certain degree of conformity with the expectations a study of the various races and their settlements would naturally suggest. Wherever we know, from historical, topographical, or linguistic evidence, that the Scandinavian element is strong, we find stature decidedly high. Even an almost solitary exception in the island of Lewis can be accounted for in the presence of an aboriginal substratum of population of Finnish type. Where there are Teutonic characteristics stature is low and weight high in proportion. The tall stature in some spots in Kent is accounted for by the presence of Jutes and Frisians. The same tall, large, red-haired people who occupied the Grampians in Agricola's time, do so at the present day, the author finds, without appreciable change. A remnant of the northern Kymri is located to the west of Clydesdale and in Upper Galloway; and the same race, with a cross of the Teutonic element, abides still among the Cheviots and in Allendale, in South Northumberland; a tall

people, with light hair, dark eyes, and moderate weight. The Cornish men maintain the large stature for which they have been celebrated for some centuries. The Welsh when crossed with English blood increase in size, if we are to take as a guarantee of this statement the fact that Welshmen with English names average 1.3 in. in height more than those with Welsh surnames. The average stature of fair-haired people, in Britain generally, is higher than that of dark-haired men. Dark-haired men with light eyes are taller than others in Mull, Kenmore, Mar, and Lesmahagow. The county of Leicester is the only important exception to the rule of full height associated with fair complexion in the south of Britain, except Harpenden, in Herts, the Scilly Islands, and, perhaps, the author throws in doubtfully, Cornwall.

The supposition that climate influences stature is unsupported. We might infer that a northern position and a somewhat rigorous climate operated favourably perhaps, as Dr. Beddoe says, by natural selection; but we are met with the exception of the high stature in Cornwall. Differences of elevation seem to be also without consequences; except in the matter of corpulence, which does not occur at high levels.

But diet is found to have considerable consequences. The absence of luxuries, such as butcher's meat and fermented drinks, does not exercise the least deleterious effect upon either stature or bulk; but absolute scantiness of food does. Dr. Beddoe thinks Cornwall may owe its exceptional position chiefly to its constant and good supply of food, ensured by its fisheries, and by its long prosperous mining industry. Where the stature is greatest milk and meal appear to have furnished the staple food of the district in other parts of the country; and where white bread is eaten, and there is but a limited supply of milk, as in the large towns, stature declines.

To sum up, the author finds that the stature of man in the large towns of Britain is proved to be considerably below the standard of the nation; and believes it possible that such degradation is hereditary and progressive. In Brussels it is the reverse of this, for there the inhabitants at the age of nineteen were found by M.M. Quetelet and Villermé, rather taller than those of the surrounding country. Every cause that is likely to have conducted to this deterioration is examined by Dr. Beddoe, and duly weighed, and many vouchers of the facts are added. For instance, thirty natives of Bristol, employed by Messrs. Derham, Brothers, yielded an average stature of 5 ft. 4.90 in., and weight of 125.67 lb.; while another thirty men born in Somersetshire, and employed there by the same firm, and at the same occupation, yielded an average of 5 ft. 6.74 in., and 134 lb. The importance of these truths consists in the fact that wherever a race attains its maximum of physical development, it contains its maximum of ability and energy. We quote Dr. Beddoe:—"Thus the inhabitant of Oude or the Punjab is as superior in courage and energy to the puny Bengali, as he is in bodily conformation. And, to come nearer home, I have shown that Scotland in general, Northumberland, Cumbria, parts of Yorkshire, &c., and Cornwall are the portions of Great Britain which produce the finest and largest men. I think it will be acknowledged that they also yield more than their share of ability and energy for the national benefit."

The stature and bulk of the Irish are also investigated with similar precision, minuteness, and comprehensiveness. But a cursory glance is insufficient for the subject; we shall be doing the reader most service in referring him to Dr. Beddoe's singular report.

THE PROTECTION OF COMMONS AND FORESTS FROM ENCROACHMENT.

THE attention of the House of Commons has been thrice called, during the session, to a question which yearly assumes more serious proportions. It is that of the state of the Royal forests and other crown lands, and, incidentally, of the common-land throughout the country. This portion of the hereditary property of the Crown has gradually fallen into an anomalous and unsatisfactory state. In the early days of the feudal system, when the population of the country was sparse, and the habits and occupations of all classes of society were far other than is the case at present, the maintenance of chases or forests formed a necessary part of royal and of seignorial state. Destruction of beasts of prey, or hunting of beasts of chase, originally formed

an integral part of the self-defence of human society. Man had to fight hand to hand with his fanged, or tusked, or horned competitor, for the means of sustenance afforded by nature. As man got the better of the beasts, mainly by the exercise of the art of the builder, which enabled him to defend his home, to protect his flocks and herds, and finally to shelter his crops from the waste of predatory animals, and from the fury of the elements, the old warfare for life sank into a kind of semi-military pastime, serviceable to the commonwealth, but not demanding the service of the *arrière ban* of the nation. Thus it naturally fell into the hands of the fighting and ruling class, of *l'homme qui bast et conseille*. And thus, as the land of the Conquest was parcelled out, and as the feudal system gradually took root, and developed in form, the royal forest-rights assumed such ample and definite proportions that, at the expiration of eight hundred years from the Norman invasion 89,000 acres of land, constituting the New Forest, remain, in one portion of England alone, subject to all sorts of ancient feudal rights. Conflicting, undefined, and questionable claims are urged on the different portions of this wide area—claims similar to that by the mutual compromise of which we have recently seen the greater part of the ancient forest of Epping has been parcelled out and devoured. These claims comprise forest rights, rights to grow or to fell timber, rights to the soil, common rights of pasture, turbary rights to cut turf and to dig peat for the consumption of every ancient chimney, manorial rights, and what not: the upshot of the whole being that, as no part of the forest land belongs in absolute property to any owner, the greater part remains practically waste and unproductive; the net return which the Crown receives from the large estate being about two shillings and three pence per acre, or something like a twentieth part of the average rental of the country, which is about 43s. per acre.

It is obvious that such a state of things can be only one of transition. Thus we have seen that the "settlement" of Epping Forest has been very rapidly taking place during the last century. The Crown, from some inexplicable cause, was then reluctant to interfere. The freeholders failed to elect a second verderer, so that the forest customs could not be enforced by the single surviving holder of that ancient office. The commoners were too poor, or too dispersed, or too indifferent, to come forward; so that the lords of the manor or other encroachers have disforested and appropriated the greater part of that noble and beautiful district.

From all parts of the country complaints are heard on this subject. In one instance it is the neglect to enforce Crown rights that is objected to; the result being the gradual extinction of the commoners. In another instance it is the undue straining of the claims of the sovereign and of the lord of the manor that is the grievance. Everywhere it is the public that suffers.

It is evident that the law needs revision in this matter. The ancient *raison d'être* of a royal chase has long since ceased to exist. It is time that all claims and jurisdictions that spring out of this decrepit law should be brought into practical accord with the existing rights and duties of property. Assuming that, in many instances, there is a threefold claim to a sort of ownership or right of partial use of these Crown lands, each of these claimants or co-proprietors would be benefited by the adjustment of the estate in such a manner that an area, or the value of an area, corresponding as closely as could be ascertained to the value of each several right, should be allotted, free of all other charges, to each party, in lieu of his more general and ill-defined claim.

There are many indications of the necessity of dealing with this important subject as a whole. Our population averages 258 persons to the square mile; but our great cities and towns contain half the inhabitants of the country. London alone contains one-eighth of the total population of England. The rate of metropolitan extension is such as to swallow up 122 square miles of country in about 89 years. The increase of some of our manufacturing centres has been far more rapid, within certain limits, than that of London itself. Thus the value of all ornamental land, especially in the immediate vicinity of cities, is yearly increasing, and the difficulty of arriving at a readily accepted comparison increases with an equal speed.

The subject is one which can only be adequately dealt with by Government. Not that we would wish to discourage any private mem-

bers of Parliament from attempting to remedy some of the evils attendant on the present state of the case. On the contrary, we hold that such exertion gives a just claim on the public gratitude to the member who devotes his energies to the task. But in order wisely, swiftly, economically, and satisfactorily to deal with the entire subject, there is, it seems to us, one course which it is best to follow.

A short Act of Parliament should be passed to empower a commission or court of circuit to visit each spot that comes under the designation of Royal forest, chase, common, or other land in which commoners have a joint interest with the Crown or with lords of the manors. The exact statements which these Commissioners would prepare, accompanied with proper maps, or rather with proper references to the Ordnance map, would form the materials for subsequent legislation. Any trouble of this kind, however, would be obviated in no small measure by authorizing the Commissioners to act as arbitrators, and, in all cases where the assent of all parties could be obtained, to direct a division of the estate in such a manner as would be fair and equitable; the preservation of open places of public resort in the neighbourhood of all towns being one of the main features to be borne in mind.

The ordinary expedient of a Royal Commission, if we judge from recent experience, would afford but a tardy and cumbrous mode of dealing with this pressing question. A small but practical body of men, sitting as a court of inquiry, and moving from spot to spot, with defined powers up to a certain limit, and with the duty imposed on them of bringing all involved difficulties before the Legislature in a state freed from doubt as to the nature of the facts, would avoid all the cumber of the ordinary method of collecting information from witnesses summoned to Westminster. An engineer, an architect or surveyor, and a barrister would form a homogeneous court, able to deal with each aspect under which the subject-matter of the inquiry would naturally present itself. In smaller and less important localities, village greens, and the like, the Commission might have the power to delegate competent men to draw up the map and the explanatory reference, reserving the power of arbitration either to the Commission or to special sub-commissioners.

In many cases, where opposition to what would soon shape itself into the normal mode of procedure might appear to be frivolous or vexatious, the Commissioners might have the power to make a provisional award, such award to become definite or binding within a certain time unless appealed against. This appeal might take one of two forms,—either that of a petition to the House of Commons, in which case a Ministerial explanation would be requisite in order to support the award; or that of a motion before a judge, who would be, by the Act suggested, empowered to hear the case without a jury, and either to confirm the award of the Commissioners, or to suspend it and direct a revision.

We should thus obtain, in a practical, rapid, and inexpensive manner, a sort of Domesday-book of all those parcels of land in which the poor man has a vested interest, which is at once daily evaporating, in point of fact, at the very same time that it is daily becoming more important, if we regard the progress of population.

Secondly, coincidently with the preparation of this valuable survey, encroachment would be checked, waste prevented, and collision rendered impossible. The common ground once laid down on the Commissioners' map could be identified at any moment, and no amount of encroachment or of illegal tenure should be allowed to value against this *prima facie* evidence. That benefit, it may be said, regards the future alone. But the future has a right to demand that justice at our hands; and the future, in this matter, presses very closely on the present.

Had a survey of common or partially common land been made at the beginning of this century, the acreage would have amounted to a far higher figure than in the year 1870. Let the survey be deferred till 1880, and the area will have perceptibly shrunk within its present proportions, curtailed as in many instances they are.

Thirdly, the Commission might be the means of laying to rest much ill-feeling, of saving much dispute and much cost, and of effecting a benefit to the country by a series of friendly arbitrations, the result of which, once effected, would be permanently recorded on the survey.

Lastly, with reference to any of those larger

and more important cases in which further legislation might be called for, the Commission would have prepared all the materials for such legislation. The special rights or claims, for example, of the turbary rights, the grazing rights, the timber rights, and the rights of chase in the New Forest, would be distinctly defined, both as to the local area which they severally affected, and as to the persons to whom they appertained. The analogy of custom in various districts would shed light on the true principles on which interests should be proportioned and compensated. The whole matter might be brought within the grasp of any one who would devote a few hours to the perusal of the reports of the Commissioners.

It is clear that the country is becoming awake to the importance of the subject. Epping is not the only forest where encroachment has to be resisted. London is not the only city of which the inhabitants need to look jealously after their open spaces. The important point is, to grasp the great principle which is at stake, and to legislate, once for all, for ourselves and for posterity. We have no right to allow those localities which ancient custom devoted to the common welfare to be diverted from this use, on the ground that the mode in which they are now conducive to the public advantage is not the same that existed a century ago. We must have our parks and commons for the people. We buy them where they do not exist; shall we allow them to be diverted from their original design, and gobbled up by private greediness, where they only require care and culture?

THE CONDITION OF DUBLIN.

HAVING already this year given a picture of the social and sanitary life of northern capitals across the borders, we will now dash in a background by a passing view of Life by the Liffey. The Irish capital is a singular city in several respects. Whether we view Dublin historically, nationally, socially, or commercially, there are lights and shades of character that no tint of colouring can portray, or gift or power of language give adequate expression to. The *Civitas Eblana* of Ptolemy, or the *Bally-ath-Chath* of the Celts, is a very paradox to herself, and equally a puzzle to the alien. Dublin is at once Danish and Norman, Celtic and Anglo-Saxon, and the real, indigenous and hereditary Dubliner of fact, feeling, and fancy, forms the smallest element of the living population on the Liffey. Leaving the ethnological inquiry in abeyance, we will direct our attention to other matters calling for more direct attention, and opening into subjects of vital importance to man's weal and that of the empire at large. As the commercial prosperity of a nation depends upon the growth of its cities and the enterprise of its citizens, social comfort must co-exist and sanitary law be respected, or else collapse or decadence in national wealth and public morals will ensue.

Civilisation means intellect, prosperity, life,—not life in its mere vulgar acceptation, but a God-created health, infusing life individually and collectively, existing for all mankind alike. Dirt and disease are the very antipodes of civilisation, and prosperity, if it can be said to exist amidst this state of things, must possess but a mushroom existence.

Dublin, for many years during the present century, retrograded in everything that constituted a prosperous city. Of late, in some branches of manufacturing and commercial enterprise, she has made a slow advance. Favourable but short-lived reactions during the last quarter of a century have taken place in the Irish capital; but owing to unlucky accidents, in part political and in part revolutionary, distrust has been engendered, and consequent inaction is to be found in every department of trade. At one time, and by one native party, Government is credited with Dublin's decline and Dublin's sad neglect; and on another occasion the cause is charged to the want of enterprise and lack of common public spirit exhibited by the merchants and traders of Dublin themselves. A careful inquiry, and personal visit and examination into Dublin's present and past state enable us to sift the charges and dispassionately dispose of the arguments. We are ready to admit, because we cannot deny it, that the Government was never inclined to be so lavish in the distribution of moneys for the carrying out of public works in Ireland, or in the Irish capital, as she has been in London. Probably there is no sane man who

carefully thinks over the matter for a moment will wonder why this reluctance to expend Government capital in Ireland has been shown. Without giving it any partisan or political complexion, more than what must of necessity attach itself to it, the case of Ireland for the last thirty years explains and justifies it to the English mind at least.

But here, let us ask before proceeding further, how is it that Dublin neglected to do for itself what Glasgow, without Government aid, has done for itself, or what even Irish Belfast has done, and is at present doing, for itself, in manufacturing and commercial enterprise? Here is a nut to crack, and the noisy disputant who will successfully crack it and digest its kernel will have an answer that will require more than the logic of Locke, or the logic and sophistries of Whately, to overturn. On the threshold of our subject we will illustrate a case in point, which naturally is embraced in our article.

Dublin requires a new bridge over the Liffey, and the widening or remodelling of the present Carlisle Bridge. She also requires that her once noble river, but now foul and open sewer, which flows through her midst, should be purified and prevented from generating disease. On whom devolves, or should devolve, this duty of improvement? Naturally, one would say, that the corporation of a city are its chief custodians, and that municipal councils are the local parliaments who should govern and improve, as well as collect local revenues. Municipal councils were never intended to be merely rate-levying and tax-collecting juntas. The very spirit of their formation forbids the supposition. They were first founded and established for a more wide and beneficent range of duties, and the sooner they are taught their special duties, and held amenable to the public will, the sooner will the towns and cities they are destroying, instead of governing, manifest a marked improvement. Had the Dublin corporation done their duty and put their shoulders to the wheel years since, the public scandal now existing in the Irish capital had never been heard of, and the empire would have been spared the childish plea and shameful confession that "the corporation has no funds, and are unable to build a bridge or even clean the Liffey." The old corporation of Dublin, which existed before 1841, bad and blameable as it was in many respects, was superior to the present in the conservatism of the city. The old corporation was charged with being a rotten and a corrupt one; but let us ask what inviolate corporation of the present so-called "reformed corporation" will stand out from amongst his brethren in the Dublin Council, and say, "My hands are clean; I can cast the first stone." Is it not a fact patent to every sensible Dublin citizen that the Dublin Corporation has been for years a bear-garden, a political spouting-shop, an arena of public partisans and sectarian strife, where the battle of political cliques has been fought, instead of the battle of thorough and authoritative and progressive municipal government?

This has been one of the reasons why the improvement of "the second city in the empire" has been retarded, and the sanitary condition of Dublin is so deplorable and reprehensible. Let us ask, what have been the great public projects carried out by the Corporation of Dublin for the last quarter of a century? With the exception of the waterworks, the Varty scheme of Sir John Gray—a decided improvement and a boon to the citizens—certainly, with this exception, the rest of the labours of the municipal council has been very small indeed. What public statues have been erected by their action, of which they can claim the entire credit of the suggestion or completion? What new streets have they constructed, independent of private aid and action? What parks have they opened, squares have they laid out, and what is the number of public fountains they have put up or restored—for there are old Dublin fountains that might be restored? The single pump, the gift of a Dublin citizen, has, in its free use for the public, conferred more blessings and perpetuated more lasting health and joy around the north of Dublin during its existence than even the Varty reservoir. The clear crystal waters of this celebrated spring, inexhaustible and untaxed, existed and exists for the public benefit: it is a privilege that jealousy has not crimped nor sniffling legs fished away; and may it continue to be as it has been for generations, a blessing.

If the local authorities, as represented in the Town Council, are asked to do what is necessary

and what ought to be done, the reply vouchsafed is that there are no funds available, or it is "under consideration." We are aware ourselves of crying evils requiring a remedy that have been "under consideration" in the Dublin Corporation for the last quarter of a century, and they are no nearer commencement now than then, judging from appearances. It is a fact that the citizens have been for years over-taxed, and that no end of fruitless and frittering deputations have been sent to London, to the utter waste of public money, and, we are almost tempted to say, for no other reason than to afford some folks an opportunity to "lionise" at the public expense.

Time and money have been frittered away on the part of the Dublin Corporation for years, in vain, childish, and senseless appeals for aid to the Government to carry out certain works, and the said works could be carried out with a little exertion and co-operation on the part of the Corporation, had the matter been properly placed before the public in its right light.

Dublin is a city that any corporation ought to be proud to govern, and, if governed with proper municipal spirit, might be for ever a peerless capital, an architectural joy, and a sanitary haven; but, alas! sycophancy, subserviency, snobbishness, and sloth, not on the part of the public at large, but on the part of their municipal tax-masters, have dragged down Dublin nearly to the seedy and slovenly condition of a Slattern of Cities. These are hard words perhaps to write, but they are written to gratify no pique or whim, but written with the honest hope that they may be the means of stimulating a little more vigorous public spirit into the public boards of Dublin, and of moving them to new and fresh efforts towards the improvement of their city.

The public buildings of Dublin, erected during the last century and early in the present, are architectural gems in their way. Sunshine and shower, hurricane and hailstorm, have swept around their granite base, and whistled in wild and weird dirges through their still scintillating columns and balustrades. The lights and shades of Nature's colouring are limed in exquisite contrast, and the storied stones of many of these grand old structures and city mansions speak forth to us in a language at once vehement, pathetic, and withal mournfully gay; but we must pass them by, and drown the burning recollections of the past in the stern and pressing duties of the present. Oh! Dublin, why have your own sons trampled you down and emasculated you? and why do they still look on, like jabbering Jews, bartering over your body for the price of a dissection instead of a resuscitation?

At the weekly meetings of almost every other corporation or local board in the empire, the matters discussed are of a progressive nature,—something relating to the widening or constructing of new streets, the opening of sewers, the utilisation of sewage, the projecting of a practical system of drainage, the construction of new bridges and thoroughfares for facilitating the public traffic; but, nine times out of every twelve, the matter of dispute in the City Hall is some religious or party bone of contention, and a party battle for some petty privilege, or in support of some arrogant claim.

How long, let us ask, does it take to erect in Dublin a public statue? Nearly a quarter of a century since a man who was deemed great among his countrymen, and who was honoured by them only as a saint or a king would be. This popular man died. After his burial, a subscription was raised to perpetuate his fame by a monument in the capital of Ireland; but in the Irish capital, with the exception of the mortuary pillar tower that rises above his tomb, no public statue has yet been erected. True, his figure, sculptured in colossal proportions, is to be seen in the Royal Exchange (now City Hall); but it must be remembered that this was the work of Hogan, the sculptor, during the tribune's lifetime. There is talk enough, goodness knows, about the statue, its artist, and its intended site, but it is not yet erected.

And here is the subject of Carlisle Bridge, and its rebuilding or remodelling. The vacillating Council who, we are sorry to say, municipally misgovern Dublin, cannot be pushed into action over the matter. That a bridge requires to be over the matter. That a bridge requires to be built to afford more space and freedom for public traffic, admits of no question. If funds cannot be raised without difficulty, why the present structure can be widened, and a very good design has been submitted to that end. We will say this, that if it is ever contemplated to push

back the shipping in the river below the Custom House and construct another bridge across the Liffey opposite Beresford-place (or nearly on a line with Gardiner-street), then in that case we are inclined to believe that the present Carlisle Bridge, if widened properly and thoroughly, and rendered more ornamental than it is, would answer all purposes.

The necessities of the growing northern district of Dublin, even though that growth is slow, will yet demand the construction of a new bridge to span the Liffey, beside or beyond the Custom House. Let this subject get consideration; for ourselves, we have given it some thought, and we are fully convinced that a bridge further down the river will only be a question of time.

Now, as to the purification of the Liffey, this is a matter that requires instant attention. Numerous plans have been submitted, and some soft heads have gone bewildered in contact with them. At low water, the effluvia arising from the bed of the river, the whole extent from King's Bridge to Carlisle Bridge, is at times sickening and intolerable. Had there been a public prosecutor in Dublin his duty would have clearly been to take immediate action against the corporation in the interest of the health and lives of the citizens. The case of Anne Loughnam, already alluded to by us, would not have been the only one, and it would not have remained for that poor woman to exert her weak power to recover damage for wilful neglect, by which a corporate body were collectively adjudged as the murderers of her husband. Along the lines of the Dublin quays at the present hour there are many poor householders suffering from the effect of a thick pestilential and foul malaria, always arising from the bed of the river, and constantly fed by the feculent sewers which are daily pouring their putrescence in liquid and solid matter into it north and south.

Any system of purification which has been proposed, no matter how short it might fall of the required ends, would be a relief; but between the advocates on one side in favour of their own hobby and that of their friends, and the opponents on the other side, in favour of theirs, the Liffey is seething and sinking deeper into the condition of a chronic cesspool.

It is difficult for serious and sober sanitary reformers to discuss, with common respect, some of the plans proposed for improving the foul condition of the Liffey. One or two proposals deserve consideration, but there are others which, if not utterly ridiculous, are at least of no practical use. To put up sluice-gates at the arches of each of the bridges to keep up a depth of water, at low tide, intended to drown the smell, while preserving the accumulated filth in the bed of the river, is surely not the way to purify the river. Added to this, this canal-like lock system of damming up and damming in the city sewage in the river, would only seemingly stifle one evil to the creation hereafter of a much greater one.

This sluice-gate barrier system would also spoil the appearance of the river, and materially injure its even navigable continuity; and it is much to be deplored that the navigable capacity of the river upwards is not and has never been improved, notwithstanding that plans were submitted several times, several years since, by experienced engineers.

Paving the bed of the river by a system of inclined planes, to give the mud and sewage a downward sweep to its centre, is equally an impracticable, useless, and utopian experiment. We do not mean to say that this plan could not be carried out, at a great expense; but we do mean to say that if carried out, it would be money and labour thrown away.

Putting aside other plans, we boldly say there is no salvation for Dublin but a thorough system of parallel main drainage and intercepting sewers on both sides of the river. Until the river is saved from city sewage pollution, on its north and south banks, there can be no proper purification of the Liffey. The treatment of the sewage or its final distribution is another question for which more than one method can be adopted, as it so pleases those whose chief business it will be to carry it out with profit and advantage to the city and the country at large.

The Poddle river, rushing over, and emptying hourly its avalanches of solid slime into the Liffey, in the most central part of the city, is a frightful picture to contemplate. What it was a quarter of a century since, "a mother of dead dogs," night soil, and butcher-shambles offal, it is still, but twice multiplied in beastly enormity.

Is it possible that the corporate authorities of Dublin can pretend to an ignorance of this frightful cloaca of rolling filth, that passes but a few yards off, almost under their very noses, while sitting in their Town Councils? The effluvia of the Poddle wriggles up through the street sewers, and the malaria of the Liffey is daily wafted up Parliament-street to the City Hall, acting as a due monitor and an avenger of corporate negligence and imbecility.

North and south of the city there are districts that never see the light of a scavenger-cart, and the water-cart is only reserved for fashionable quarters, where noses are not composed of plebeian india-rubber, and broadcloth is preferred to corduroy. When the cleansing of the city was done by contract a few years ago—at a time, we mean, when it was well paid for—it was done well; but if it be true that the corporation does it now on more economical principles, on the old Hibernian principle of "Do it yourself and save the halfpenny," then we can understand why Grafton-street and Nassau-street on wet days are streets of a thousand pools, and why Sackville-street and Britain-street follow the bad suit.

THE BUSINESS OF LOCAL BOARDS.

THE generic term, "local board," may be taken to mean any town authority, whether it be a corporation under the Municipal Corporations Act, a Board of Improvement Commissioners under a special Act of Parliament, or a local Board acting under the authority and for the purpose of carrying out the provisions of one of the general Acts. These bodies are elected by the inhabitants for short terms of years, a portion being elected annually, to carry on the public business, and take a general charge of the public welfare. The number of members of a local Board does not bear any fixed ratio to the number of inhabitants of a town, but is fixed in various ways. In those towns which are incorporated under the Municipal Corporations Act there is a certain number appointed for each ward or division of the town. In towns not incorporated the number is fixed by the special Act, or by the general Act, which may have been adopted, so that in some small corporate towns we find as many members of the public body as there are in some other and much larger towns, and in some places even a greater number. An inconvenience, to say the least of it, results from this.

There are two methods of procedure, one or the other of which is adopted in every town. In some towns, perhaps in the greater number, committees are appointed from the general body to carry on special parts of the public business, as, for instance, the care of the highways; the drainage; the sanitary condition of the dwellings; the waterworks or the gasworks, if any; the improvements of the town, in respect of opening up new thoroughfares or widening and improving existing streets; and sometimes for general purposes that cannot be brought under any special name; and these committees report their proceedings from time to time to the general body, who meet only occasionally. In other towns the business is done by the whole body (except on some rare occasions, when it may be convenient to appoint a committee for a temporary purpose), who meet at regular intervals, generally once a month, to receive the reports of the officers, who have in the mean time carried out what instructions they may have received at the previous Board meetings, and done any work of emergency. The work of the officers is thus brought prominently under the notice of all the members of the Board, and if their services deserve favourable recognition, it is widely spread; or, otherwise, so are their faults; which is in either case an advantage to both the local Board and its officers.

The usual staff in towns of moderate size consists of a town clerk or law clerk; an engineer or surveyor (the terms being synonymous in either case, and only variable by local circumstances); a medical officer of health and a sanitary inspector, each with such assistance as may be required; also a treasurer, and a clerk for the general purpose of accounts, who, in small towns, is often also the collector. In large towns the staff is more elaborate.

Now, in those towns where the system of working by committees is adopted, it is often found that a few of the members of the Board are appointed, presumably because of their superior knowledge or position, upon more than one committee; and, as experience has shown that a

committee gets through its business with more satisfaction when the number of members is limited to a few than when it consists of many, this system necessarily throws out of actual co-operation many members of the general body, who only know what is going on from the reports of the committee, made from time to time at long intervals. This constitutes the inconvenience above mentioned. Committees do not report their whole proceedings to the Board, even when they report at all; but, except on such occasions as require them first to procure the sanction of the general body, they order works to be done on their own authority; and, indeed, unless they were to do so, the business could not be carried on; for to have to report all their proceedings to the general body before anything could be done would prove so cumbersome as to be impracticable. Thus many members of local boards find themselves elected by their townsmen to take part in carrying on the public business who have no opportunity to take such part. The consequence is a jealousy of these members of what the committees may be doing, and a disposition to carp at, and find fault with, whatever may be done, without calmly weighing the matter as to whether it is right or wrong, whether for or against the welfare of the town; and if this were all, it might be a small matter; but in cases where the committees ask the sanction of the general body to proposals that they may have agreed to recommend, the grumbling of these non-contents is followed by adverse votes, which often prevent the carrying out of real improvements that would prove economical and highly advantageous to the town—a result of the exclusion of the opponents from any actual co-operation in the proposals. Under this system an injustice is done to the officers by confining an intimate knowledge of their qualifications, whether for or against themselves, to a few members of the Board, which is a disadvantage to both parties.

But there is another inconvenience in this eclectic system. The outsiders, being jealous of the action of those appointed on the committees, agitate the question among themselves, and by dint of opposition to everything brought forward so disgust some of those elected, that they become careless, at the next nomination of committee-men, whether they are appointed or not, and thus they open a way for outsiders to be appointed in their stead. These new men have all the business of the situation to learn; are ignorant of what has been the custom and the practice of former committees; and, to show some justification for their appointment, proceed to want everything done in some fanciful and impracticable way of their own. They thus obstruct the proper business of the committee, and cause some of its members to refuse to attend; get into difficulties, which their want of knowledge of the business of the situation prevents their getting out of; and, in short, make a very undesirable commotion in the town. This they rather like, as showing to their townsmen, who, indeed, care very little more about the matter than to laugh at it, that they have done something, however unwise it may have been.

Now it seems but reasonable that those who are fit and proper persons to be elected to the Board at all are fit to be appointed on committees; and if, instead of picking and choosing (where there is, after all, but small room for choice amongst the members) every member of the Board were to be appointed, whether he will or not, on several committees (if the committee system is to be adopted at all) there would be more harmonious action, and the quarrels and waste of time at Board meetings, arising from the jealousy of outsiders, would be done away with—at least, so far as they are due to this cause. It requires an apprenticeship to carry on public business with effect, and by admitting the novices to places on committees, they would in course of time learn their own deficiencies and appreciate the difficulties that former committees may have had to contend with, of which these new members were probably wholly ignorant while they were outside the pale.

It may be unfair to say so much against an existing state of things without suggesting a more complete remedy, and therefore it may be as well to say that experience seems to show that public bodies of this kind should act in a body, except for temporary purposes, and not in detail by committees. They thus all become equally responsible; and if it be irksome to some to attend so often, it only has the effect of weeding out those who had better not have been elected at all; and if a little more pressure

were put upon members of local Boards to compel their attendance at meetings, it would soon be publicly seen who are the fittest persons to represent the interests of the town. And that consideration reduces the question to this conclusion, that a small body acting together and in concert is much more effective than a numerous body, to some only of whose members it is left to do the business of the whole. And if that be so, then the number of members of the local Boards in some towns requires revision; for it is quite certain that in some the number is so large and disproportionate to the business to be done, that one-half of them are in the others' way.

If a system of working by committees is to be continued, there should be this provision made compulsory—that the whole of the proceedings of the committee be reported to the Board; that is to say, that full and accurate minutes be made of the transactions of the committee and the minutes read at the Board meetings. Thus the Board would become acquainted with what had been brought before the committee, and would see how it had been dealt with. In this way committees could not, as they often do now, quietly shelve propositions made to them, and which never see the light.

It has often been remarked that owners of small house property and speculating builders are eager to get themselves elected to local Boards; and when there that they use their influence to prevent such sanitary measures as would require them to make outlay of money on such property, and to prevent bye-laws being made that would require houses to be built in such a manner as to insure their being healthy dwelling-places. There can be no doubt whatever that improvements in towns are greatly prevented by such people; and it would be a wholesome provision if they could be declared to be disqualified for election to local Boards.

Perhaps the Sanitary Commission, now sitting, might not consider this question wholly out of their province, inasmuch as that any improvement in the constitution of local Boards will be tantamount to an improvement in the administration of all sanitary measures.

POMPEII AT SYDENHAM.

POMPEII, that wonderful portion of the antique world preserved for the enlightenment of the modern, has never been so well set forth for those who remain in England as it is now in the Crystal Palace. Signor Luzzati, an Italian artist, by means of *photosculpture* and glasses, has reproduced, with marvellous fidelity, all the most important parts of the city as now exposed,—the Forum, the street of tombs, the Villa of Diomedes, the house excavated in 1869, the public baths, and so on. To these succeed a number of views, showing assumed restorations, concerning which there may be of course different opinions; and then some scenes of Pompeian life, an eruption of Mount Vesuvius, suggesting the manner in which the city was buried in the year of Our Lord 79, and a panorama of the city. When we add that there are also models in relief of some of the houses, readers will be disposed to accept the assertion with which we commenced these observations.

At present an extra shilling is charged for viewing these remarkable illustrations, and anywhere else it would not be thought too much. At the Crystal Palace, however, people get so much for a shilling, that the extra charge seems relatively large, and we are very much disposed to think that if it were reduced to half, the visitors would be increased fourfold at least.

ENAMEL PAINTING ON PORCELAIN.

THE production of fine paintings on porcelain is attended with so much costly risk, and demands so much traditional knowledge, that the art has always been sparingly practised. In England at the present time very little high-class work is attempted. The colours employed are affected by heat each in a peculiar way, for which the artist has to allow, and after each firing, three or four being required, the picture is repainted, so that the last firing may leave the work as nearly a representation of the original as possible.

In Bamberg, Bavaria, Mr. Carl Schmidt has conducted for years past an establishment for the production of such works, and he has recently opened in Bond-street a dépôt for the sale of them. The specimens there certainly include works of high merit and deserve attention, as

the mere mention of some of the subjects will show. Thus we find "The Death of the Constable of Bourbon before Rome," after Faucou-niere, by Meinelt; "Albanese Girl," after Riedel, by Meinelt; "Rape of the Sabine," after Rubens, by Zapf; "Columbus in Prison," after Wappers, by Zapf; "John Huss before his Death, at Worms," after Lessing, by Bauer; "Madonna," after Murillo, by Eckardt; "The Israelites at Babylon," after Bendemann, by F. Schmidt; "Titian's Daughter," after Titian, by Beetz; "Charles IX. on the Eve of St. Bartholomew," after Wappers, by Vogtherr; "Art and Liberty," after Gallait, by Kiesewetter; "Rembrandt and his Wife," after Rembrandt, by Kiesewetter. The largest of these are on plates more than 2 ft. long, and most of them are executed with great skill and delicacy. Transcripts of fine works so produced cannot fade or decay, and, when dirty, may be cleaned with soap and water without fear of injury.

PRESERVATION OF WANDSWORTH COMMON.

ON Thursday, the 14th inst., the Lord Mayor presided at a large and influential meeting in the Mansion House, for the purpose of aiding in the collection of funds to meet the expense of trying the rights of the public to the enjoyment of an uninterrupted range over one of the few open spaces left round the metropolis.

Amongst those present were the Hon. Mr. Cowper-Temple, M.P.; Prof. Fawcett, M.P.; Mr. Eykyn, M.P.; Mr. A. Johnston, M.P.; Mr. Holmes, M.P.; Mr. E. F. Buxton, M.P.; and several members of the Commons Preservation Society. Letters expressing strong sympathy in the object of the meeting were read from the Bishop of Winchester, Mr. Spurgeon, Sir C. W. Dilke, M.P., and others.

Mr. Buckmaster gave a very full description of the various inclosures of portions of the common, from the commencement, about the year 1836, by the Southampton Railway Company, up to the present time, when only about half the common remains, and that is being continually parcelled out by speculating builders and others.

Mr. Cowper-Temple moved the first resolution, "That the preservation of Wandsworth-common as an open space is desirable in the interests of the people of London." He observed that for the preservation of common land in the neighbourhood of towns, there must be combined action on the part of individuals, and money must be provided for ascertaining and defending the rights of the public, whatever those rights might be. He said that some years ago there was a strong movement towards the inclosure of waste lands, and their conversion for agricultural purposes; and this was very well, and still highly desirable in the case of remote districts at a distance from populous places; but in the neighbourhood of such places, it was not a national benefit but a national misfortune when commons were reduced from their free and open state and made into private property,—and that not for the purpose of supplying food for the people, but of further extending the dreary waste of brick houses.

Mr. A. Johnson, in seconding the resolution, observed that very probably Lord Spencer had little to do with this matter of enclosing the common; that these things were generally arranged by the lawyers and surveyors, who took what they called a practical view, and only made it their business to get all they could.

Professor Fawcett moved the second resolution, expressing sympathy with the efforts now being made to secure the common for purposes of recreation. He said that he attributed great importance to the indirect as well as to the direct effects of the movement now on foot, inasmuch as it would be a gratifying proof that the public feeling has been aroused, and that henceforth the enclosure of commons in general would be watched with a narrow and scrutinising gaze, and we shall be able to say to any Government in power, that if they show the same indifference to such questions in the future as they have done in the past, they will not be doing their duty to the public, but inflicting on them an injury which no time can repair.

Mr. Holmes, M.P., moved the third resolution, that subscriptions be collected at the meeting and elsewhere in the City of London. He remarked that London now contained nearly 4,000,000 inhabitants, a great many of whom, coming into the City to business by day, resorted to the vicinity of the commons to live,

and it was necessary to pay great regard to those open spaces which still remained.

Mr. Eykyn, in seconding the resolution, expressed a hope that litigation might be avoided, and that the subscriptions raised might be spent in beautifying the common.

A sum of 400*l.* was collected in the room.

ARCHITECTURAL EXCURSION IN LINCOLN.

WE may add to what we have already said on this excursion that detailed particulars may be had on application to Mr. John S. Quilter, 9, Conduit-street, London. Generally, the plan may be stated as follows:—On Monday, August the 22nd, the members will assemble in Lincoln, and in the afternoon an address will be given by Mr. Sharpe, in the Assembly-rooms, when he will direct attention to the principal object worthy of notice, and the best means of studying them, after which a general survey of the cathedral will be made. Tuesday will be spent in the cathedral and inspecting other buildings in Lincoln. On Wednesday an excursion will be made along a very interesting line of churches lying between Lincoln and Grantham. On Thursday another will be made to Sleaford and the neighbourhood. On Friday, after a visit to Boston, the party will proceed to Spalding, and, returning, visit a series of churches between the two towns. And Saturday will be occupied with a visit to Peterborough Cathedral, completing the sketches, comparing notes, and terminating the excursion. Special arrangements have been made to keep the expenses within the smallest limits: exclusive of railway fares, not yet settled, they will probably not exceed 3*l.*

TREES IN PARK AND KENSINGTON GARDENS.

SEEING the floral perfection of the Park borders, and the long flower-walk, it is hard to reconcile the mind to the utter neglect of the stately trees in the Park, and of the overcrowded and wasted condition of those in the Gardens. Long since it was shown in the *Builder* that the old foresters in the latter were suffering and decaying from too close propinquity; many there are standing only 3 ft., 4 ft., and 5 ft. apart, with bare poles for 20 ft. or 30 ft., the branches interlacing, and annually crippling and deforming each other.

For effect, forest trees ought to have a wide range; and in rows, where so planted, ought to be at least 30 ft. apart; and the opposing range, if such there be, should be planted in alternation. Now, there are several vista ranges which stand at tolerably fair distance, and seem to flourish in the wilderness; but the principal extent of the Gardens is occupied by high, closely-packed trees without garniture, germinating only at the top. If the weakest and least promising of these were thinned out—say one in four,—the surviving standards would spread out and become healthy, and then the groves might be more frequently resorted to as a cheering promenade or sylvan refuge in hot weather.

Now, as to Hyde Park, where the arborage is more graceful, and where, being less packed together, sylvan grace is, in some degree, better maintained, a grievous mistake has been lately committed, in filling in the intervals with waste earth or mould round the stems, to a depth varying from 1 ft. to 5 ft., thus burying the root-collar of the tree, and assuring its, perhaps tardy, but certain decay.

In all cases where it is thought expedient to raise the surface, there ought to be a circle of large loose stones, or blocks, placed around the stem, in order to secure free access of air and moisture, so as not to choke the respiratory glands of the tree.

A view of the park borders, where the surface has been thus heaped out, will discover at least ten trees wholly defunct, and a score more in a state of gradual decline; and now that these open spaces have become, since their ornamentation, the resort of increasing numbers, a little care devoted by a competent arborist would amply repay the Commissioners, who have already done so much to gratify taste and to improve the health of sojourners in London.

As the metropolis extends, every tree and shrub in open park increases in value; and if, as in gardening, the vigour of plants is secured by thinning out; by a parity of reasoning, our old foresters may, by the same treatment, be induced with restored vigour.

THE SERPENTINE.

THE Chief Commissioner has determined on removing, instead of covering over, the mud in the Serpentine. When the intention of covering it up and the great objection to this course were first pointed out in our pages, the importance of the advice was recognised by but few, and the truth of the assertion made was denied in several quarters. Gradually, however, the correctness of the information and wisdom of the advice became recognised, and will now be acted on. It is to be regretted that considerations of expense will be allowed to prevail against the desirability of lessening the depth of the water, so as to render the Serpentine a safe bathing-place. Its importance to the metropolis in this respect would justify any reasonable and well-applied expenditure. As a medium step, might not the southern half, say, of the bed be raised, buoys or other indicators marking out where the extra depth would be found? We have for so many years on and off pointed to the evil conditions existing at the Serpentine, and the necessity for improvement, that we cannot quietly let the opportunity be lost for making a thoroughly good job of it.

ANNUAL INTERNATIONAL EXHIBITIONS.

APPOINTMENT OF JUDGES IN ART.

THE Royal Academy has named the following gentlemen to act as judges for admitting works of art at the International Exhibition of 1871:—Mr. Elmore for painting, Mr. Calder Marshall for sculpture, and Mr. E. M. Barry for architecture. The Society of Painters in Water Colours has named Mr. Alfred W. Hunt; and the Society of British Artists, Mr. Clint. Other nominations have to be made. At a recent meeting of the committee for Section D (Specimens and Illustrations of Modes of Teaching Fine Art, Music, Natural History, and Physical Science), it was resolved that the committee be divided into four sub-sections. The following were named for the sub-section Fine Art:—John Bell; E. J. Boehm; H. A. Bowler; F. S. Cary; I. Gerstenberg; Solomon Hart, R.A.; F. Leighton, R.A.; Sir Coutts Lindsay, bart.; J. E. Millais, R.A.; R. Redgrave, R.A.; the President of the Royal Academy (Sir Francis Grant); Sir M. Digby Wyatt; Archbishop of York; Secretaries, H. A. Bowler; and R. Redgrave, R.A.

FALL OF A CORNICE IN NEWCASTLE.

A CORNICE accident has occurred at a large square block of new buildings now being erected in Gallowgate, Newcastle-upon-Tyne, opposite the end of Darn Creek, resulting in the death of a man and serious injury of a boy. The building is being erected for Mr. John Christie, printer and stationer, from plans by Mr. Alfred Swan, architect, Newcastle, and consists of a number of shops on the ground floor, with warehouses and offices above. It is of considerable height, being four stories above the cellar floor. The walls, which are about 1 ft. in thickness, are built of bricks, and ornamented with heavy stone facings. The walls were carried up to their entire height, and the cornice placed along the front. It was composed of two layers of fire-bricks, one projecting over the other, and capped with a flat table of stone, which was 1 ft. 7½ in. in depth. This stone projected from the main wall nearly 1 ft. 2 in., so that there could only be about 6 in. built into the wall. Above the stone was built a slightly overlapping fringe of brick-work, which caused the projection to be still larger. The workmen in putting it up are said to have expressed great doubt as to the wisdom of having the stone to project so much without properly securing it in the wall. When the crash came the men engaged on the building almost immediately missed one of their comrades, a bricklayer, who was known to have been engaged by himself at the top of the front scaffolding just before the accident occurred. A search was at once made for him amongst the rubbish, and after some of the heavy stones had been removed he was found dead beneath a heap of broken stones and bricks, with huge splinters of wood forced into portions of his body, and his head smashed in a frightful manner, with the brain protruding. Almost simultaneously it was discovered that a little boy, who had been passing at the time, was suffering from a broken leg, having been knocked down by a piece of wood from the scaffolding, which was broken up

along the entire face of the building. An outcry was raised when it became known that the accident had occurred from what was considered the faulty construction of the building. There is no contractor for the work, it seems, the workmen being engaged by the week under a foreman, who receives his instructions from the printer and stationer for whom the building is being erected, and who also purchases the materials required.

AN IMPERISHABLE HOTHOUSE.

FROM the recently-published list of patents it appears that Mr. W. P. Ayres has secured "Improvements in the Construction and Arrangement of Horticultural and other Buildings, or Erections, or Structures, and in the means and appliances for heating the same." These consist of roofs formed without sashes, sash-bars, putty, or paint, or any woodwork outside, and consequently no painting will at any time be required. Secondly, Mr. Ayres forms his floors, plant-stages, and side or partition walls in slabs of cement concrete, strengthened in a peculiar manner so as to bear any amount of pressure that may be placed upon them; and yet admit of being perforated for the air to circulate through them, panelled to hold water for evaporation, or the pots to stand in, or perforated and panelled. These slabs, it is said, can be manufactured of any required strength, and, consequently, are suitable for fire-proof floors, partition-walls, tabling, or shelving for shop, office, or warehouse fittings, or for any situations where slate or marble slabs have hitherto been used, with the advantage that they can be manufactured of any size, and in the place where they are required to be used; left rough for ordinary use; or be finished plain or in colours with the face of polished marble. Thirdly, Mr. Ayres introduces a new system of heating, dispensing with plunging or fermenting material for bottom heat, and substitutes a system by which a stream of air, moist or dry, is constantly passing through the centre of the earth containing the roots of the plant as well as around the sides of the pot. For glazing, Mr. Ayres uses flat glass of great strength and quality, jointed with transparent cement, or he may use glass turned up at the sides, or any other form of bent glass that he may find necessary for the purposes of his invention. The alleged advantages are,—economy in first construction, portability (when desired), and when manufactured in iron galvanised, a house so imperishable as to wear for a lifetime without further cost.

WATERWORKS.

FOR the Ashford waterworks two wells have been sunk at Henwood, about 100 yards distant from each other, the upper well being 22 ft. 6 in. deep, and the lower well 18 ft. 6 in. deep. These wells Mr. Hoad, of Worthing, engineer, has connected by a syphon apparatus, with strong 6 in. cast-iron pipes, so that the water in the upper well flows into the lower as fast as the latter is taken out, the two always standing at the same level. From the lower well the descent is not steep enough for the water to flow by gravitation down to the mill, and Mr. Hoad is carrying it there by another of his syphons of the same dimensions as that between the two wells, and laid at a depth from 9 ft. to 11 ft. 6 in. The two wells are supplied by two springs of considerable power, and quite independent of each other. Mr. Hoad has pumped out 140,000 gallons in ten hours; and expects 300,000 gallons per day. The water has been tested and found to be of excellent quality.

Mr. Bateman, the engineer, who designed the Witcombe reservoir works for the Gloucester water supply, has written to the authorities saying, that he is at a loss to know upon what principle to charge for his labour, but saying that in larger works he usually receives from 7½ per cent. to 10 per cent. on the outlay, and that he proposes in this instance to charge 10 per cent. on the gross outlay of nearly 11,000l., thus making his bill, with 129l. 8s. 10d. for travelling expenses, amount in the whole to 1,229l. 8s. 10d. This amount seems to have astonished the members of the Board, and it was resolved, after a conversation, that the question should be put aside for discussion in committee. A question also arose as to the contractors, Messrs. Ralph & Scott. They had left in the hands of the corporation 550l. as a security for the maintenance of the works for one year.

They now wrote that, needing money for carrying on another contract, they would be glad if the corporation would let them have 250l. of the security money. It was said that they had lost money by the contract, and that therefore they should be so far obliged. But others opposed any departure from the contract, and ultimately the application was refused.

A NEW OMNIBUS.

A MELBOURNE correspondent, in giving us an account of a new sort of street conveyance, says:—The scheme has attracted considerable attention here; and I have thought that you might like to publish it in your very useful journal, which has a large circulation in these Australasian colonies. The plan will be patented both in Great Britain, France, and America. The great principle involved is the carriage of the load below the centre of gravity. The new style of conveyance has been recently patented by Mr. Dyer. Instead of the Passengers being inside the vehicle, as at present, they are all outside of it. There is no close box into which twelve human beings are stuffed to inhale each other's expirations and exhalations. There is no crushing up for a seat, or putting seven in a space intended for six, and not too large for five. All inconveniences are avoided by placing the passengers back to back, instead of face to face. The new omnibus has only one hind wheel, instead of two; and this one wheel, placed in the centre of the vehicle, does the work of the two now used. A light and elegant roof covers the two rows of seats, and reaches down in front far enough to shelter the passengers from rain or sun, but not far enough to obstruct their view of the opposite side of the street in which they are going. There are aprons also which draw up from the footboard, as a protection in wet weather. The vehicle is therefore much lower than the present omnibus, being only about 8 ft. in height. A passenger steps in and out at one effort from the street into his or her own separate place or division. The large wheel at the back is quite concealed, and revolves in a closed case or sheath, some 12 in. in width. The seats being on two sides and the end, and being comfortably padded at the back and cushioned, the vehicle will somewhat resemble that piece of furniture known as an ottoman, with arms to it and a roof overhead. There will be an immense economy in construction, as there are no doors, no glazing, no painting of sides, no internal panelling, and only three wheels, instead of four. The draught on the horses will be much lighter, as the friction will be diminished by one-fourth, at least. In addition to this, it is known that a wheel of large diameter is much easier to draw than one of small, so that there is no doubt but that the draught will be very largely lessened. The weight of the vehicle will not be more than two-thirds of the present one, and the cost also. The vehicle, nevertheless, is not adapted for bad weather.

SARNESFIELD CHURCH.

JOHN ABELL.

SARNESFIELD CHURCH has been restored and repaired. The work of restoration has been to remove the modern lath and plaster flat ceilings and whitewash, &c., throughout; to rake out and point the stonework; to take down and rebuild the shattered south wall of the sacristy, and insert therein a two-light window, three characteristic windows in the nave, a geometric three-light east window, and a trefoil-headed small window in the north wall of the chancel, with credence and piscina formed under the same. An archway is opened out between the nave and tower, giving increased effect as well as accommodation. The font has been removed and refixed on a new platform and base by the south door, and the gables throughout have been surmounted with stone copings, with appropriate crosses at their apex. The pulpit, at the north angle of the nave, is executed in Painswick stone, with marble inlaid emblematical medallions, and has a carved alabaster cornice. The reredos is of Painswick stone, with carved enriched cornice, and is fitted with marble emblematic inlays and cross. The nave, the aisle, sacristy, and porch are paved partly with stone, relieved with Lugwardine tiles of three colours; the chancel and sacristy, gradually elevated to the height of five steps, are also paved with encaustic tiles from the Lugwardine works. The

seating in the nave and stalls in the chancel is fixed on raised platforms, with ventilating gratings under, arranged with easy slopes. The material used for these and the tower screen is pitch pine varnished. The roofs externally are covered with Broseley tiling, ridged with a specially made burnt clay red cresting. The apex of the porch is finished with a cross of the same material. The tower is similarly covered. The windows are filled with two tints of antique cathedral quarry glazing, relieved with blue and ruby border; in the east and credence window portions of subjects in ancient glass are preserved and re-adapted. The whole building is heated by a close fire-grate fixed in the sacristy, from which communicate flues down each passage, fed by fire and draft holes, covered with iron lids. The expenditure has amounted to 520*l.*, exclusive of about 30*l.* for necessary fittings, &c. The work has been executed by Mr. John Walker, of Hereford, builder, in accordance with drawings and specifications prepared by and under the immediate supervision of Mr. George Cowley Haddon, of Hereford and Great Malvern, architect.

The churchyard contains the tombstone of John Abell, the celebrated architect of the Market-houses of Hereford, Leominster, Kington, Brecon, and Weobley, who died in the year 1694, aged 97. The stone displays his effigies, kneeling with those of his two wives, and the emblems of his profession, the rule, the compass, and the square. It was designed and sculptured by himself: the epitaph was also of his own composition, and runs thus—

"This craggy stone a covering
(is for an architect's bed)
That lofty building rais'd high
(yet now lays low his head)
His line and rule so death con-
(cludes, are locked up in stone)
Build they who list or they who
(wist, for he can build no more)
His house of clay could hold no longer,
May Heaven's joy frame him a stronger.
In memory of John Abell (Architect)
who died in the year 1694 in the 97th year of his age
Vixit ut vivas in vitam eternam."

"Restored by subscription in the year 1868."

The tomb, which stands on the right-hand side of the porch (on the left-hand of the visitor on entering), is of a very plain and unpretending appearance, and altogether unworthy of the dust that reposes below, considering the estimation in which Abell, in his day, was held as an architect. It consists of an ordinary erection of rough masonry, on which is imposed the "craggy stone" referred to. The sculpturings consist of very rude figures, such as one is accustomed to see in the earliest Norman examples.

CHURCHES NEAR LONDON.

St. Barnabas's Church, Grove-road, Bethnal-green.—This church, consecrated on the 2nd inst., consists of nave (56 ft. high to the ridge), north and south aisles, chancel, with organ-chamber and vestry on the north, and spacious baptistery on the south side; but the Orientation is not strictly correct, the site not permitting it. There is an entrance at the west end of the north aisle, but the principal one is under the tower, which stands out from the church at the south-west angle, and forms with the spire a prominent feature at the junction of Eastond and Grove roads. The style is Decorated, freely treated, and the materials brick and stone, the interior being ornamented with coloured bricks. The church, which seats about 900, and cost under 4,000*l.*, was built under the direction of Mr. Wigginton, architect.

Christ Church, South Hackney.—The foundation-stone of this church will be laid by Lord George Hamilton, M.P., on the 6th proximo. The contract has been taken by Messrs. Axford & Whillier at 4,875*l.*, under Mr. Wigginton, as architect.

St. Luke's, in the Parish of St. Paul, Deptford.—On Tuesday last, the foundation-stone of this church was laid, by Mr. W. J. Evelyn, on a site presented by that gentleman, in Evelyn-street, Lower-road, Deptford. The Bishop of Rochester, attended by many of the local clergy, assisted. The church is of thirteenth-century architecture in style, and is to be built of Kentish rag stone; Bath stone is used for the worked portions. A square tower, without spire, crosses the chancel, which abuts upon the road, with a circular apse. The colour, exteriorly, is sought to be relieved by narrow tile-bands at irregular intervals. Accommodation is provided for 1,000 persons; and the contract, including all fittings, has been taken by Messrs. Dove, Brothers, of

Islington, at 5,287*l.* Mr. Thomas Henry Watson is the architect.

St. Benet's New Church, Stepney.—The arrangements for the re-erection of the demolished City Church of St. Benet, Gracechurch-street, have now been completed with the Ecclesiastical Commissioners. The commissioners have been enabled to provide out of the funds arising from the sale of the site and fabric of the old church a permanent endowment of 300*l.* per annum for the new benefice, and a sum of 6,000*l.* for building the new church. The order in council which authorised the removal of St. Benet's had directed that the church should be re-erected in Stepney, and a site purchased by the Bishop of London's Fund has been presented to the Ecclesiastical Commissioners for the purpose. It is situated on the Mile-end-road, in the north ward of the hamlet of Mile-end Old-town, between the almshouses of Bancroft's Hospital and the Jewish burial-ground, and within the ecclesiastical district or new parish of Trinity, Stepney. The Ecclesiastical Commissioners have given instructions to their architect, Mr. Ewan Christian, for the immediate preparation of plans for the new church. St. Benet's, Stepney, will be the first church re-erected under the provisions of the Union of Benefices Act.

St. Philip's Church, South Lambeth.—On the 13th inst., the Bishop of Winchester consecrated the new church of St. Philip, in Queen's-road, South Lambeth, near the York-road station, at Battersea Park. It is a handsome structure in the Decorated style, with tower, and is fitted with stained-glass windows throughout. The entire expense has been defrayed by Mr. Flower, of Furze Down, Tooting-common, the patron of the new church. Mr. James T. Knowles, jun., was the architect, and Messrs. Colls & Sons were, we believe, the builders. The cost of the church has been about 12,000*l.* We may be able to give some more detailed particulars hereafter.

COLSTON MEMORIAL WINDOW, REDCLIFF CHURCH.

THE window which has been erected by subscription in the north transept of Redcliff Church, Bristol, in memory of the philanthropist Edward Colston, is intended generally to illustrate works of mercy, as having a direct bearing on the benevolent character of Colston. The window is of considerable height. The top and bottom tiers are entirely devoted to works of mercy, viz.:—top tier, "Receiving the Stranger," "Visiting the Prison," "Teaching the Ignorant," "Leading the Blind;" bottom tier, "Feeding the Hungry," "Giving Drink to the Thirsty," "Clothing the Naked," "Visiting the Sick;" while the centre tier represents the parable of the "Good Samaritan." In the larger tracery openings are introduced angels; and in the smaller openings, ornaments only; while the arms of Colston are placed at the base of the left-hand light in the lower tier of lights. It is inscribed, "Go and do thou likewise," on the left-hand side; and along the bottom, "In memory of Edward Colston. Erected by subscription, A.D. 1870."

The memorial is the work of Messrs. Clayton & Bell, who in other parts of the church also have set up some of their best work.

PRESCOT POLICE-STATION.

THE new county police-offices and court-room for the district of Prescott, in Lancashire, has just been completed, and was opened on the 1st of July. The building is of gray brick, with red and white Woolton stone dressings, and is decorated to a small extent with coloured brick-work. The central portion is flanked with two circular turret pinnacles on square corbelled bases, and a machicolated parapet surmounts the whole front. The court-room is 40 ft. by 34 ft., with splayed ceiling, half-open timbered. In the rear is a second and smaller combined court and magistrates' room. The accommodation comprises houses for a married sergeant and constable; sleeping-rooms and day-rooms for four single constables; bath-room, and lavatory for four single constables; and offices for the authority; large police-office, and offices for the superintendent; room for testing weights and perpendents; room for testing weights and measures; stable and coach-house; and four prisoners' cells, ventilated by separate shafts, and heated by hot water. The architects were Messrs. Reade & Goodison, of Liverpool; and the contractors, Messrs. Jones & Son, of the same town. The total cost, including land, will not exceed 3,400*l.*

ROYAL ARCHITECTURAL MUSEUM, WESTMINSTER.

THE council wish the members of the museum to understand that it is now open free to them on the evenings of Tuesday, Thursday, and Saturday (the vacation months of August and September excepted), but that as the arrangement entails considerable expense in lighting, &c., its continuance will depend on the numbers attending. It is open to non-subscribers at a charge of 6d. each evening. The next session of the architectural art classes will commence in October. The council desire to form a small library at the museum, for the use of art-students and art-workmen studying there, and they have published a list of desirable books to suggest to friends what are wanted.

ST. PAUL'S NATIONAL SCHOOL, TOTTENHAM.

THE foundation-stone of this girls' school was laid on the 14th inst. The site on which the buildings are to be erected consists of a plot of land on the south side of Park-road, with a frontage of 50 ft. and a depth of 223 ft. The plan adopted consists of a school-room, 45 ft. 3 in. by 20 ft., with a return at the southern end of 31 ft. 6 in. by 18 ft. In addition, a class-room is provided, 18 ft. by 12 ft. A porch, 12 ft. by 8 ft., with lavatory, will be provided, together with separate coal-cellar, ash-pit, and water-closets, with an ample playground in the rear. On the east side of the school there will be erected a residence for the mistress. The exterior is designed in the Gothic style, to accord with the church and parsonage, and will be erected in sound brickwork, with stone dressings, and relieved by red brick bands and arches. The front window, of Bath stone, will be of four lights, with traceried head and mullions, and relieving arch over. The work will be carried out by Mr. James Linzell, for the sum of 976*l.* 12s. The architect is Mr. Joseph James, of London, whose design was selected in competition with five or six others, principally on account of its overcoming the difficulties of the site.

DWELLINGS FOR FARM LABOURERS, WILTSHIRE.

WE learn that the Marquis of Ailesbury is about to remodel a large number of dwellings on his estates at Savernake, in Wiltshire. The plans will be on various models. Each cottage will contain a living-room, scullery, and three bedrooms, with entrance-porch, pantry, wood-house, piggery, privy, cesspit, and ashpit. Each dwelling will have a hard and soft water supply, with washing-copper, pump, sink, and a fire-clay baking oven of an improved description. The living-rooms will be fitted with ranges, having ovens, and the bedrooms will have small cottage grates. Some of the cottages will have all their sleeping-rooms on the chamber-floor; while in others, one of the bedrooms will be arranged on the ground floor. The cottages will be built of a local red brick, made on his lordship's estates, relieved with dark grey bricks. The roofs will be covered with Staffordshire or Bridgewater tiles in bands and courses, finished with an ornamental crested ridge. The porches will have projecting roofs, supported on stone corbels and wooden brackets; and the dormer windows will also have projecting roofs. The cottages will be erected in pairs and groups. Mr. John Birch is the architect employed.

MONUMENTAL.

The Simpson Scottish Memorial.—At a meeting of the London committee, held at Stafford House, on July 11th, 1870, *inter alia*, it was proposed by Sir Robert Anstruther, seconded by Dr. Priestly, and carried unanimously,—"That in defence of the strongly expressed views of the Edinburgh committee, the London committee accede to their proposal of the erection of a hospital in Edinburgh for the diseases of women as a memorial of Simpson, but regard it as essential that its erection be in accordance with the most recently expressed views of the great professor; and they would suggest that the benefit of the memorial be extended to other cities, as London and Dublin, if the funds collected be sufficiently large." The erection of hospitals suitable for the relief of

suffering women, and where students could study this class of diseases, was long and earnestly desired by Sir James Simpson.

The Derby Memorial.—A meeting of the general committee of the Statue Fund was held on Wednesday last at the Carlton Club, the Earl of Harrowby in the chair. It was decided that Mr. Mathew Noble should be entrusted with the commission for executing a statue.

WORCESTER.

Diocesan Architectural Society.—The first excursion of this society for the present year has taken place. Several churches and interesting old houses in the southern part of the county were inspected. Nearly forty ladies and gentlemen assembled at the Upton-on-Severn railway station, and proceeded in carriages to the different objects of interest. At Eastington Hall, the party was received by Mr. E. G. Stone and Mr. J. Ellis, the former gentleman reading some notes, extracted from the register of Longdon, relating to the former possessors of the estate. At Longdon the vicar, the Rev. A. C. Lefroy, met the visitors, and the Rev. W. S. and Mrs. Symonds kindly entertained the excursionists at luncheon at Pendock Rectory. The intended visit to the Berrow was given up for want of time; and the rain, which had threatened all the morning, came down in such torrents during the inspection of Birtmorton Church and court, that it was thought advisable not to stop at Castlemorton, but to return direct to the Upton station. The party returned to Worcester, *via* Malvern.

Model Dwellings Association.—The sixteenth annual meeting of the governors of this association has been held at the Guildhall, Worcester. Mr. G. W. Hastings presided. The general report and financial statement says:—"From the small balance in hand it will be obvious that no dividend can be declared. Your governors very much regret this result, but it is attributable to circumstances over which they have had no control." The chairman said the association was certainly not in a very flourishing condition, so far as a dividend was concerned, but he was glad to hear that the buildings had answered the purposes for which they were established,—*viz.*, that of improving the health, decency, and comfort of the labouring classes in the city. It certainly appeared from the balance-sheet that there had been 50*l.* laid out for exceptional expenses; and presuming that in the ensuing year that would not occur again, he might infer that there would be a good balance at their next meeting. The report was unanimously adopted.

FLOOD.

A FLOOD of great severity, and causing much damage, swept the Bacup and Todmorden valleys on Saturday last. Rain of tropical volume brought down such quantities of flood water that the usual outlets were quite inadequate, and the swollen torrent rushed along with great depth and force, carrying before it every obstacle. Trees, rocks of tons weight, walls and bridges have been swept away, and very many valuable buildings destroyed. Two lives have been lost. The scene is a valley of desolation; the damage done is estimated at over 100,000*l.* The warning of what might be expected, given in our columns, was justified in a remarkable manner. We are informed that it led to the avoidance of, at any rate, one disaster.

NOTICE UNDER BUILDING ACT.

WARNING TO BUILDERS.

Mr. HUNT, of 61, Rotherfield-street, was summoned to Clerkenwell Police-court by Mr. Godwin, District Surveyor of South Islington, for neglecting to give two days' notice before erecting a certain building in a garden at the back of his residence. This was a workshop, partly of wood, and was discovered by the Surveyor. The same builder had done works at another house a short time back without giving notice as required by the Act.—Fined 20*s.*, and costs, 12*s.* 6*d.*

Last week, Mr. Lee, executing work for the London Parcels Company, in Mildmay-avenue, was summoned by the District Surveyor of South Islington, for neglecting to give the proper notice before commencing the work, namely, altering sundry windows into doorways

in a building about 90 ft. by 17 ft., and erecting a wooden pent-house in front of same about 60 ft. long.—The magistrate, Mr. Cooke, fined him 3*l.*, and costs, 12*s.* 6*d.*

Messrs. Varley, of Mildmay-avenue, were also summoned by the District Surveyor of South Islington, for neglecting to give notice prior to commencing a building on their premises, consisting of a wooden framework covered with corrugated iron, and partly sunk into the ground, for boiler of steam-engine, with a pipe-flue running into an ordinary flue of the party-wall adjoining.—Fined 40*s.*, and costs 12*s.* 6*d.*

OLYMPIC GAMES IN LONDON.

It would be not a little curious to consider, had but the world time for it, what would be done by the world of art in these modern times if all the old art and time-honoured "precedents" were to be suddenly blotted out from human memory and consequent art practice and practical usefulness; in other words, suppose our modern world of artists were in the precise position of the old Greek artists in the days of Pericles and Phidias, or, perhaps, still stranger, in the times of Homer and the "Juventus Mundi!" What would be done? What would our paintings and statues be like; and would there be any public buildings at all? Decorated they could not be, it is quite certain. Nothing can be more curious and instructive than to go back in thought to those old days, and, looking out from thence, to glance at our modern ways of artistic work, and contrast the two—the old and ignorant, and the modern, and improved, and educated, and scientific. Never did this thought come on us so strongly as at the now so popular and,—it is comforting to say it,—fashionable horse-show, but a week or two back, in the Agricultural Hall. The old Greek, as everybody knows, was fond of horses, and could not do without them, and exhibited no small skill and genius in perpetuating their forms in marble and metal; and seems, indeed, to have made quite companions of them, so that wherever he moved they went with him. In the world-renowned Olympic Games, celebrated every four years, and on the origin and meaning of which there has been such a world of controversy, horses and horsemanship formed a necessary and integral part. These famous games were not peculiar to Greece, and founded there solely, but had their origin in the common humanity of the world everywhere. The Islington Horse-show is a fragment of the Olympic Games, and comes from the same universal source, *viz.*, that instinctive love and liking in the heart of everybody, whatever their station and degree of education may be, for the fine forms and movements of animal and human life. A few thoughts on the similitudes and the differences between the old Greek and new London games may be useful perhaps to some who have not considered art in this light.

First, a word on the old Olympic horse-show. The Olympic Games date back far beyond the written records of Greek history; their origin is lost, as might be expected, in the mists of the past. As soon as some naked warrior succeeded in subduing and riding a wild horse, there were, and must have been, Olympic Games and horse-shows, but of which there would be no written record. Iphitus, king of Elis, has always had the credit of restoring or reviving these famous games; and therefore it is but fair to help to perpetuate his name and honour his memory; for he it was who first reduced the whole festival into a regular and coherent system, and gave it, says a modern historian, "by the establishment of the Olympiad that principle of life and duration as enabled it to outlive the laws and customs, the liberty, and almost the religion of Greece." Passing by the religious aspect of these games,—a subject not a little curious, and on which Mr. Gladstone dwells so fondly, and raises to a Bible level,—and the remarkable fact, that from the institution of a mere game or show the Greeks reckoned their very historical time, not by years, but Olympiads, or intervals of four years—for it is a hopeless business, says a modern German inquirer into Greek history, to try to understand it at all without perpetual reference to the games,—we may come at once to the more popular and intelligible part of this great subject—perhaps the greatest in the art of the future. The Olympic shows consisted mainly, in the order in which they were introduced into the Olympic stadium, of foot-races; of the *pala* or wrestling; of the pentathlon, which consisted of

leaping, running, quoiting, darting, and wrestling; and of the horse and chariot races,—mere games, be it observed, having for their object nothing more than the finding out which was the best man and the best horse. These were the motives and objects equally in the Greek and London horse-shows; and it must be a matter of no small interest to find out, if possible, what advance we have made, science being our helper and guide, on the primitive and rude Greek idea of a horse and man show. Certainly we ought to have done this, considering the time that has elapsed since, and the progress that has been made, and the experience gained; but alas for the progressive nature of man, and the wonderful effects and influence of science! for, if we look at the visible remains of Greek life and ways, as seen in their art remains and sculpture, and painting on vases of those very Greek games, and others like them, and then compare it all with what has been going on during the past month at the Islington show, it will be manifest to the dullest that we have everything to learn. If some old Greek were to rise from his grave, and visit the modern horse-show, it would not be to learn, but to teach. Let us contrast them.

No subject can well be more interesting to artists than this, when it is considered that the real superiority of Greek art lay in the main in the fact that these games or shows of men and animals were the real inciting causes of their superlative sculpture; and in the fact that the models for it were found in them, and that there can be but little if any doubt that the very finest specimens, both of men and animals, were collected together from all parts of Greece to contend for the prizes and honours offered. It would also seem, from the sculptures and vase paintings, to be a certain fact that every care and attention was bestowed on the necessary adjuncts, *i.e.*, on the chariots and weapons used in the games, and perhaps, most of all, on the dress of those who took part in them, and not least on the harness of the horses. No matter how fine the glorious form of the Greek man, even though he were actually half deified, according to Mr. Gladstone's theory of the Greek and Greek art, if he were dressed up and hidden in the hideous and ungainly costume of a modern stableman or fashionable groom. It could matter but little how fine the form of a noble horse if weighted and bound up in a ponderous saddle, almost as big round as the animal itself. No skill in driving, or fineness of action in the horses drawing the chariot could avail, if the said chariot be a lumbering railway van, or a tub on tall wheels, standing higher than the horses themselves. If the object of the annual show at the Agricultural Hall is to show fine animals and good riding, and appropriate carriages, as we must suppose it to be,—*in fact*, a *living art show*,—then is it indeed difficult to see how it can be worse managed than it is, or how so many incongruous things can be more unhappily brought together. In one thing we may be said to have an advantage over the Greek, and it is in the *size* of the horses. The Greek horses were rather ponies than horses, and were short and somewhat thickset; about the size, it would seem, of the two beautiful little cream-coloured ponies seen at Islington. Nothing could be finer in form or more graceful in movement, than some of the splendid animals brought together, and seen in healthy life and action at the Islington show. We are of course supposing that the object is not only to encourage the breeding of useful animals, but noble and beautiful ones as well, so that this annual show shall possess an artistic as well as mere utilitarian value. We may, then, fairly say that a number of fine and beautiful horses were seen together, fully equal to any that old Greece could muster at the Olympic Games, and horses as well worth the study of the artist and sculptor as any that Phidias ever saw and copied; and the question then comes, are the material and artificial accessories an advance on, or even equal to, those of the old Greek? They ought most surely to be better; for art may be defined to consist in the making artificial and useful things harmonise with Nature's own works. We must confine ourselves, by way of example, merely to two or three things in this very horse-show not a little remarkable, when contrasted with the old Greek way of doing the same things. Nothing could well be more painful than to witness the mere riding of these noble animals. Instead of, as in Greek days, the riding and guiding man on the back of the animal wearing some clothing consistent with the work he had to do, and easily admitting of

It is obviously impossible, in so slight a notice of things artistic as they go on, to notice in detail all that calls for it; but, as a curious antiquarian matter, it may be noticed that none of the horsemen in the Phidian sculptures wear stirrups. This, in great part, accounts for the wonderfully graceful pose of the riders, the body naturally and without effort accommodating itself to the movements of the animal. What a pity it seems that those who make horse-riding a vocation do not study the Greek horsemen, and hence learn how to ride safely and well; and would it not be a good thing to have put up in a conspicuous place at next year's horse-show a series of panels from the Parthenon frieze by way of a practical lesson and book on how to ride a horse, and too, it may be added, how to hold the reins? The Greek riding was surely the very perfection and acme of horsemanship, but with poor dear scientific and improved John Bull, fresh from the stable or Hyde Park, it seems to consist in the formation of a rigid angle one side the reins, the other the straight stirrup leathers, and the other poised on the unyielding surface of the stiff saddle-seat. Nothing can possibly be worse or more ungraceful and awkward and dangerous. Surely we may learn something, if not all and everything, from the Greek of the days of Phidias; we may learn to ride, and to copy the rider and his horse afterwards on canvas, or in marble. Not a few lessons, too, may be got from studying the costume of the riders and the way in which it is worn, and the aspect of the young men and youths who ride the horses and drive the chariots; for they seem to have been selected for the work, as were the animals, and trained to the work, and to have been naturally fitted for it. It may be interesting and useful to remind the reader who has not thought much about art in this practical light, that what is meant by good riding and natural riding in Greek days may be seen best on the panels from the Parthenon frieze numbered 56, 38, 39, where the action of the youth to the left of the last panel, and immediately behind the foremost horseman, would seem to be the perfection of horsemanship and graceful action, and worth whole volumes as a study of "how to ride." Nos. 41, 42, 43, and 45 may be studied; and in No. 55 may be seen what to do with an unruly animal. The whole series of sculptured panels from Nos. 62 to 74 shows both horses and riders in almost every variety of attitude, for no two of them are alike, and evidences how it was that the old Greek came to be witched with noble horsemanship. In slabs 26, 28, and 29, and in

CHILDREN IN BRICKYARDS.

"We feel strongly that girls should not be employed in brick and tile yards on any account, as the work is entirely unfit for them. To see the girls engaged in such works, and at such unseasonable hours, mixed up with boys of the roughest class, must convey to the mind some idea of the sort of wives, with such training, they will make, and the kind of influence they will eventually bring to bear on society.

"What I am anxious for," says Mr. Smith, "and have been desiring from the first, is to have all brick-yards under Government inspection; and that on the plan roughly sketched out by me, and not under the Workshops Act, as it is at present in operation, which is a complete failure; from this fact, that the local authorities will not meddle with their neighbours' children, through which cause many times unpleasantness will occur. They think, and rightly too, it is a matter for the Government to take up, and not for them.

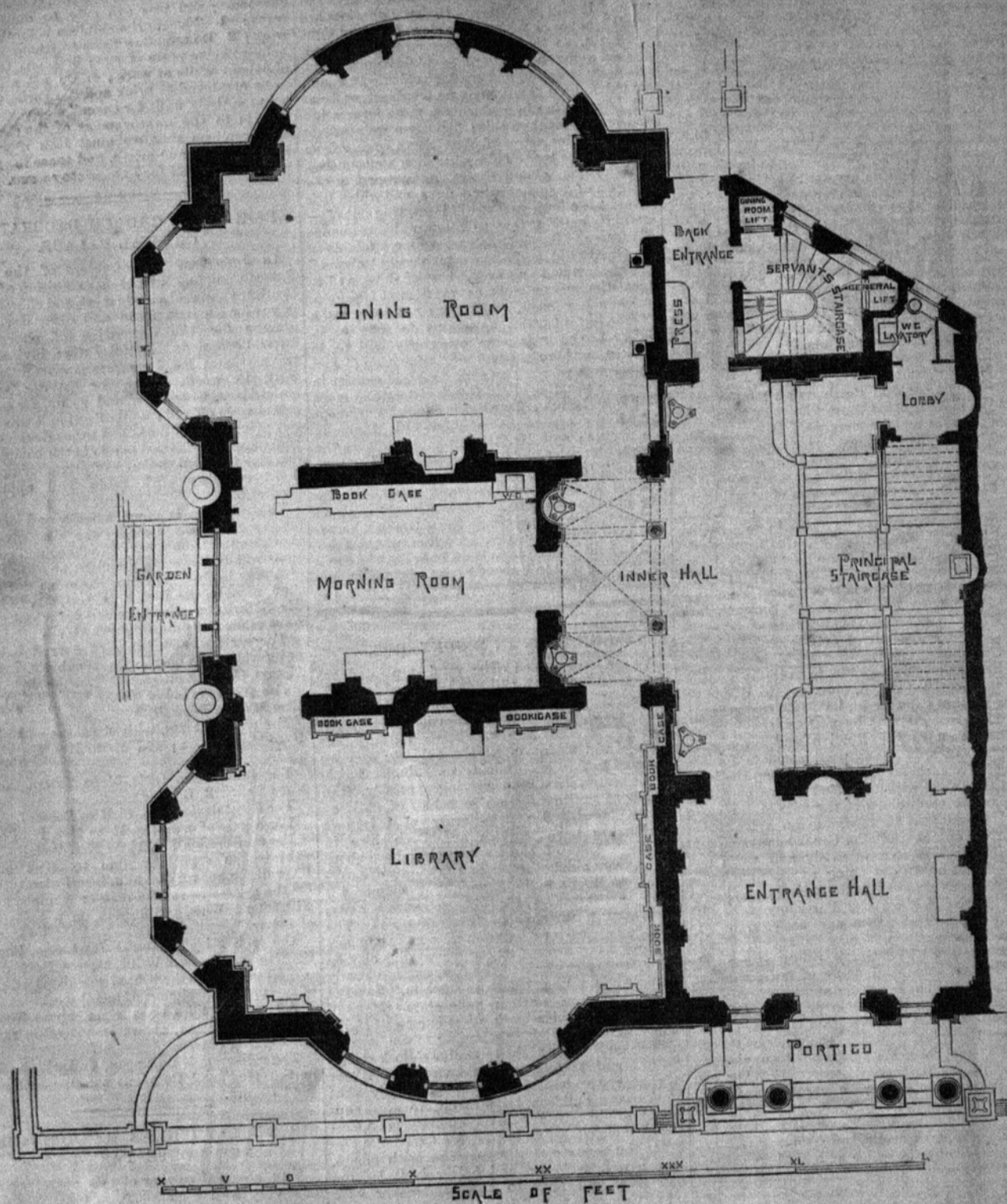
"I have thought about it

What I am anxious to see brought about is a

It is to the improvement of the children in all directions that we must look if we would lessen disease and crime, and those in the brick-yards loudly call for immediate rescue.

The collection is now open, and will be found in the Medieval Court, at the Tropical end of the building.

The staircase is of original design. It consists of double side-flights, landing on a broad space or gallery on the first floor, from which five doors open to an ante-room, 24 ft. by 15 ft. 6 in.; to a north drawing-room, 38 ft. by 32 ft.; to a north drawing-room, 37 ft. by 27 ft. (each having two bow-windows); to a boudoir, 22 ft. 6 in. by 19 ft.; and to the family and back staircase, communicating with the bedroom-floors. The staircase itself is of mahogany, the walls being lined with alabaster and with marbles of two or three different kinds, forming



SIR DUDLEY C. MARJORIBANKS'S HOUSE, PARK LANE.
Plan of Ground Floor.

plinth and dado. Above the drawing-room floor are three stories of bedrooms, consisting of six rooms on the second floor, six on the third floor, and six maid-servants' rooms on the upper floor, with bath-rooms, linen-closets, &c.

A stone staircase communicates with the spacious lead flat with which the upper story is covered, so as to give access for a large party in case of reviews and other displays in Hyde Park. The view from this flat is most extensive,—in fact, a complete panorama.

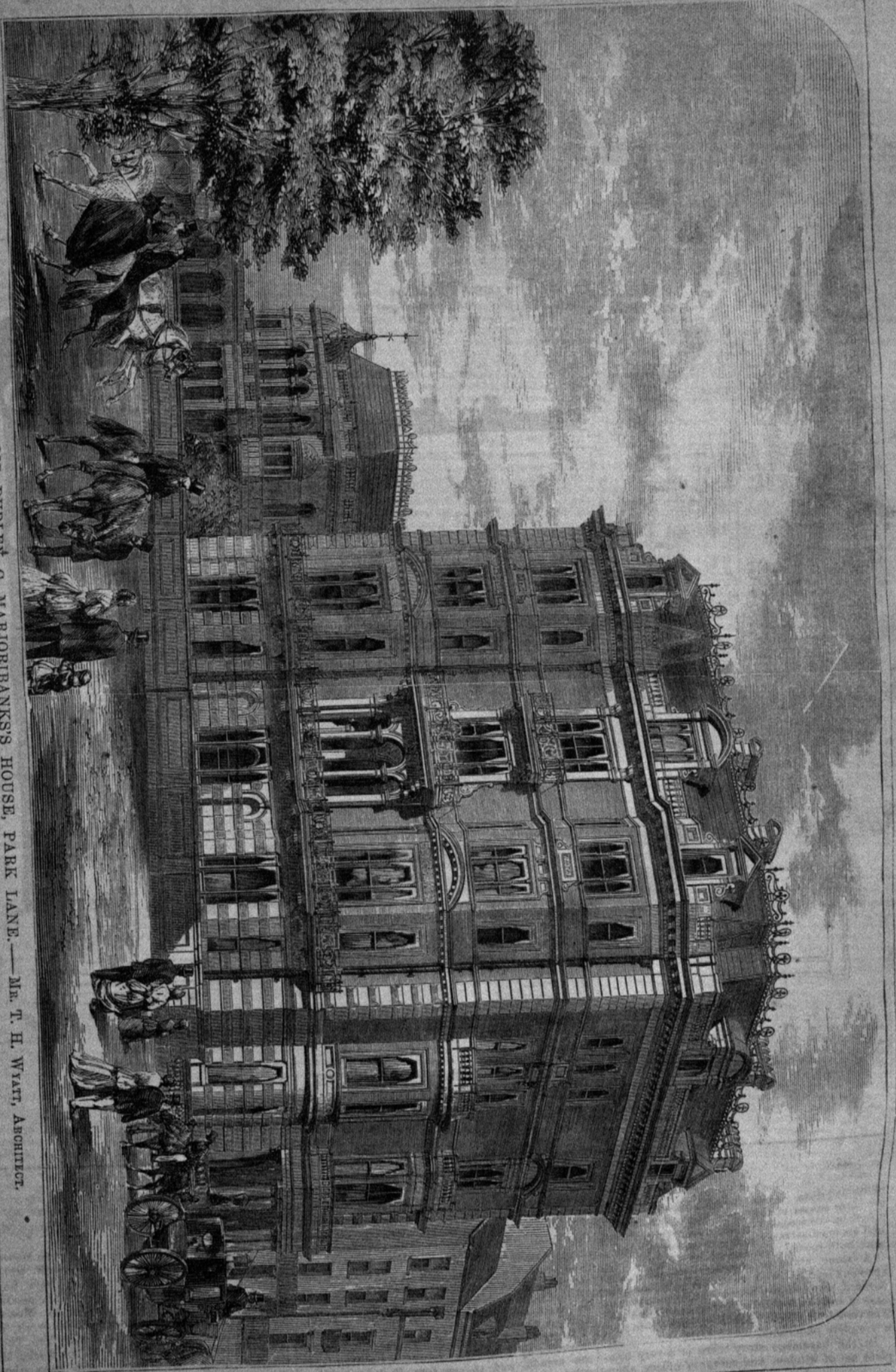
In the basement story there is a very complete set of kitchen and servants' offices, abun-

dantly lighted, and surrounded on three sides with a spacious area. A distinct building (though in communication with the basement story) stands in the garden, and faces Park-street. On the ground floor it consists of the tradesmen's entrance, a steward's office, and bedrooms for men-servants. On the upper or first floor a spacious and light billiard-room, 30 ft. by 23 ft., with a bay window to the park, 17 ft. by 7 ft., is provided. There is access to this room by a separate staircase, opening from the arcade, and thence into Park-lane by a colonnade.

The materials are red brick, of a deep, rich colour, and Portland stone.

The contractors for the structure were Messrs. J. & C. L'Anson. The decorative works, which are of a very elaborate character, have been done by Messrs. Wright & Mansfield; the marble, alabaster, and granite work, is by Messrs. Banks & Co.; and the ornamental ironwork, by Mr. Carslake. The architect was Mr. Thos. Henry Wyatt; and the clerk of the works, Mr. Charles Long. The works have been about three years in progress. We need scarcely say the amount expended is large.

LONDON ARCHITECTURE: SIR DUDLEY C. MARJORIBANKS'S HOUSE, PARK LANE.—MR. T. H. WYATT, ARCHITECT.



HOME COLONIES FOR OUR WORKMEN.

SIR,—The *Builder* deserves, and it will receive, the thanks of every intelligent mind for its consistent efforts to promote the welfare and happiness of the great human family, but more especially of that portion of it usually known as the working class. Belonging as I do to that class, I feel that you have sounded the keynote of a remedy for many, if not most, of the ills to which we are subject, when you point out and enforce, in a manner which seems unanswerable, the desirability of establishing home colonies for our workers. I must confess that it has for a long time seemed to me to be a very great anomaly that a continual and increasing exodus of our producing class should be fostered and encouraged by people in high places.

I have looked on with something akin to alarm at the constant drain which is going on of some of our best and most industrious artisans, farmers, and labourers. These, who are for the most part clever, energetic, and thoughtful, go to help in a great degree to build up the fortunes of a rival country,—a country possessed of resources such as are not to be found in any other country in the world; these, our countrymen, are induced, or are driven, as the case may be, to break up their homes, and leave their native land, by present want or the fear of future poverty, prepared to undergo almost any privation on the way so that they may have a prospect of future plenty, and at last end their days in peace, and with no fear of the workhouse looming in the distance.

This, to my mind, suicidal depletion of our best blood is going on at the present time at a greater rate than it has ever been known hitherto. It is the policy of Dr. Sangrado repeated, and will no doubt produce similar results. Living as I do in Liverpool, the point of departure of the greatest number of emigrants from these kingdoms, I have had ample opportunity of criticising and noting the appearance and character of those who leave us, and they seem to me, in most cases, to be those who have in the past most profited by our working men's colleges, our mechanics' institutes, and our science and art instruction, and who only want, what in the result they are almost sure to get, the means and opportunity to distinguish themselves in arts, in arms, or in conduct. I have said that the exodus of our people at this time is immense. Let me prove that by quoting the Government returns of those who have left Liverpool for the United States and Canada during the quarter ending the 30th of June last, and in ships sailing under the Act. The number of English people who went to the United States during the three months was 23,764; of Irish, 14,852, or a total of 38,616; to Canada went 8,218 English; 2 Irish, or 8,326 altogether. These figures show a total of nearly 50,000 of the inhabitants of these islands who have left this one port alone, to crowd the cities and till the prairies of that great western land. The whole of these people are for ever lost to this country. With the excessive import duties upon all goods introduced into the States, they no longer consume any of our productions. The protection of native industry is a radical part of the policy of the American, and is carried out almost so prohibitively. But, in spite of all, the immigrant prospers. How does he do it? The acquisition of a piece of land is his saviour. There is the grand secret of his prosperity. But at what a sacrifice! Before he can call that land his own, he must renounce his allegiance to his mother country, and swear fealty to his adopted country. And to this only a very small minority object. They feel that their mother country has been in many cases a harsh and unkind mother to them, and they have no compunction in allowing a step-mother to supply her place.

Of late years Britain has been a kinder mother to her poorer children than formerly, but much remains to be done. The poor must possess the land together with the rich. The tendency of all modern improvements has been the other way—the poor have been improved off the face of the land altogether. Such must no longer be, or Britain will sink in the scale of nations. The spectacle must no longer be presented, as it is at this moment in Cheshire, of a lord of the manor trying his utmost to cast from their holdings poor men, who, having taken possession of a piece of waste land each forty years ago, have reared their homestead, and made the wilderness a garden. Rather let every lord of the manor gather together the poor inhabitants of his dis-

trict and portion off to each so much of the now waste land as may become by their labour sufficient for their maintenance. Such, or something like it, is being done in what are called new countries; why cannot it be done here? We should then keep in their native country those who would produce us food and be retained as customers for our manufactures. They would also be retained as taxpayers. We must remember, what those who are left here are not likely to forget, that a huge debt hangs over the people who inhabit this country, the interest of which must be regularly met, and directly or indirectly those who remain must pay the share of those who leave.

All honour, then, I say, to the patriot who points out the way to increased prosperity and happiness for the hardy sons of toil. Very few of us, I am sure, in our hearts desire to be expatriated from our native country; and if land can be found—as I am sure it can be found, for I have walked on foot the length and breadth of this country, and have been grieved to see so much given up to the fox, the rabbit, and the furze—let means be adopted, and that soon, by which the now idle hands may be brought into contact with the lands which, now waste, will by their labour become as a garden and blossom as a rose. Let "Back to the land!" be our cry. E. G.

"WHO VOLUNTEERS FOR PALESTINE?"

SIR,—I read your paragraph last week under the above heading with great interest, and think you would oblige more of your readers than myself by a little more information on the same subject. When is it intended that the expedition should start? And how long will it probably remain abroad? Two or three years between the ages of twenty and thirty form an important period of a young man's life, while the architecture of the Holy Land is not the most important for an architect's study, being more interesting in an archaeological than an architectural point of view. Nevertheless, "the advantage of visiting foreign parts," and in the company of the Palestine explorers, is a matter of considerable importance, and I shall be glad to have further information through the medium of your columns. I enclose my name and address. T. L. W.

POSITION OF CATHEDRAL ORGANS.

SIR,—Might not the vexed question of the place of a large organ be settled by this plan—namely, by burying it bodily in a grave in the middle of a church? Let a well be made, circular or elliptical on plan, for strength of abutment, 20 ft. deep, or 50 ft. if necessary, at pipes to stand upright in it, and cement to keep out damp; and with a connection with heating apparatus, so that the contents of the well should be sufficiently warmed without being baked (a thing that is not always secured when an organ stands too near to the slates of a roof). Place the organ in this grave or well, and round the mouth of the well place a screen like that round Henry VII.'s tomb. If at the entrance to the cathedral choir, let there be two such open screens, with a bridge over the well between, to give access to the choir.

If the sound rises too directly upwards, and loses itself in the roof, place a sounding-board at an angle of 45 degrees, to deflect it into a horizontal direction. G. M.

"DRAINING WITHOUT SCIENCE."

SIR,—A Clod's modesty equals his knowledge of science and drainage. I have to thank him for setting me right, after demolishing my conclusions to his own satisfaction. At the same time, may I ask him what drainage is, how it affects land, and why it is undertaken? At present my ignorance seems hopeless. I always, until I read his remarkable letter, believed that drainage was intended to get rid not only of stagnant surface water, but also that under the surface,—not to distribute it. He says drainage distributes it, preserves it from evaporation, and therefore keeps the land more moist. Wise! A wet subsoil is that which should be prevented as keeping land cold, and "cold land," as a farmer will tell him, is a rotter of roots.

What a grand thing drainage would be for the desert of Sahara, if his science is not at fault. Mr. "Clod," good farming and true science will

not admit of you: clods should be pulverized: you have only to try to teach the first clod-hopper who crosses you, and that hopper will assuredly come down a crusher.

I repeat that steps will soon have to be taken, and this matter of land drainage must enter into the consideration of commissioners appointed for the purpose, and who will have to act in concert with those investigating the question of water supply for cities, and the purification of rivers. As I before stated, my idea is that land drainage has had much to do with evils which have assumed such tremendous proportions. No doubt, obstacles will be thrown in the way, and arguments adduced, to prevent proper steps being taken; but common sense only will see that the matter is set right, and that at no late date. M. U.

GLASS AND PUTTY.

SIR,—We should be glad to know what is the best method of separating the putty from glass and wood where the glazing is forty years old. F. & Co.

DELAYED DECISIONS.

SIR,—If a competitor for the Tadcaster workhouse complains at the length of time it takes to decide that competition, I think competitors for the offices of the Halifax Permanent Benefit Building Society may justly complain. The drawings were sent in on the 8th day of February last, —thus five months ago,—and yet to my knowledge nothing decisive has yet been arrived at. Can any reader of the *Builder* inform me what has been done up to the present time, and the cause of so much delay in deciding this lengthened competition? A COMPETITOR.

HOUSE AGENTS' ACTIONS.

SWAINE AND ANOTHER v. PAULET.

IN this case, tried in the Queen's Bench, Guildhall, before Mr. Justice Blackburn and a Special Jury, the plaintiffs are auctioneers and estate agents at Nottingham. The defendant is the son and trustee for Lady George Paulet.

The action was brought to recover 165*l.* 5*s.* commission on the sale of the house, No. 36, Phillimore Gardens Kensington, to Mr. Carl Siemens, the electrical engineer, at the sum of 7,350*l.*, but which sale afterwards went off, as it was said, in consequence of the defendant requiring additional terms to those originally proposed.

The defence was that inasmuch as the sale of the house was never completed, the plaintiffs were not entitled to be paid anything.

Mr. Siemens was called to prove that he was ready and willing to purchase on the terms originally asked by the defendant, but that further terms were asked which he was not willing to agree to, and that the purchase went off in consequence.

Mr. Justice Blackburn directed the jury that where an agent found an undoubtedly responsible person ready to purchase on the terms upon which the agent had instructions to sell, the agent was entitled to his commission or such a sum as the jury, under all the circumstances of the case, considered a fair and proper remuneration for the services rendered, notwithstanding the sale should afterwards go off on account of any alteration in terms on the part of the vendor.

The jury, without retiring from the box, found a verdict for the plaintiffs for the full amount claimed—165*l.* 5*s.*

THE ARCHITECT OF ST. BOTOLPH'S, BISHOPSGATE-STREET.

SIR,—In the very pleasant "Provincial Impressions of Town Structures," in your number of the 9th of July, the tower of St. Botolph's is alluded to as "not certainly one of the happiest of Wren's inspirations."

Wren died 25th February, 1723, *ætat* 91, ("Parentalia," 1750, p. 347). St. Botolph's was begun 10th April, 1725.

G. Dance has been credited with this church; also J. James (of St. George's, Hanover-square, and Greenwich Church); it is, however, commonly attributed to James Gold, whose name appears in the Act of Parliament bearing on the erection (Godwin's "Churches of London," vol. ii.).

As the church is a fair example of a well-proportioned, sober structure, creditable to its author (even if not a brilliant performance), and characteristic of its time,—even contrasting not unpleasantly with some cleverer church-architecture of our time,—it would be a satisfaction to Gold such memory as his "one ewe lamb" may secure him.

The church is hardly in Wren's manner, and he has a most ample store of honours attached to his name.

Is anything known of Gold? The notices of him seem very scanty. S. F. C.

Slate Pencil Cutting by Wholesale.

Among Yankee ingenuities, there is said to be a machine at Rutland, Vermont, which cuts slate-pencils at the rate of 20,000 in an hour.

the building is to be erected. The Earl of Stamford and Warrington has given the site for the new building, and the foundation stone has been laid. The building has been designed by Mr. John Eaton, architect, Ashton, and will take the form of a parallelogram, two stories in height. On each floor there are to be school-rooms, 60 ft. by 30 ft., and two class-rooms, each 15 ft. square. The style of architecture is Early English.

Elland.—The corner-stone of the new Wesleyan Schools here [has been laid. The schools are from plans by Mr. B. W. Jackson, architect, Halifax, and will have a plain front and circular-headed windows. The rooms are 63 ft. by 30 ft., the ground-floor containing two class-rooms, infants' school, kitchen, and other accommodation; the upper room contains large school-room and four class-rooms, and the cost of building is estimated at about 600*l*.

Tower-hill, London.—The foundation-stone of a Roman Catholic School has been laid by Princess Marguerite of Orleans in the neighbourhood of Tower-hill. It is proposed to add an industrial school. The building will cost 2,500*l*., and the site 1,600*l*. The architect is Mr. John Young, junior, of Mincing-lane.

Newcastle-on-Tyne.—The foundation stone of new schools in connexion with Bath-lane Church, was laid on Thursday in last week. The schools are to be built on a site adjoining the chapel, and will accommodate 400 children. The buildings will be entirely of stone, and are in the Gothic style of architecture, harmonising in character with the church adjoining. The principal elevation, facing Locke-street, is to present a large centre block, marked by gables at the east and west ends. The building will be lighted by large three-light windows in the centre block, together with four-light windows in the end gables. Admission will be gained to the building through a porch situated at the north-west angle, and by two side doors situated at the east end of the building. The centre block is to be surmounted by a bell turret, rising about 34 ft. above the level of the ridge. The school-room, which internally measures 85 ft. by 55 ft., will be divided into centre and side aisles by cast-iron columns, used as supports for the roof, the portion of the roof over the aisles being open, and the roof over the nave wagon-headed in form. The height from floor to ceiling will be about 30 ft. Class-rooms, suitable for the requirements of the school, are to be provided at the east end of the school-room. Lavatories, water-closets, and other conveniences are to be provided at each end of the school-room. The space unoccupied at the east and west ends of the building will be used as a playground. Ventilation is secured by cast-iron ventilators in the sides of the school, and by ventilators fixed in the roof of the main building. The building will be warmed by hot water from the heating apparatus in connexion with the church. The cost of the building will be about 3,000*l*. Mr. T. Oliver, of Newcastle-on-Tyne, is the architect: he was also the architect of the church.

Halifax.—The Stannary Congregational Church School has been opened. It is in the Gothic style, and has been erected under the superintendence of Messrs. Horsfall, Wardle, & Patchett, of Halifax. It will seat from 800 to 900 persons. The basement story is devoted to class-rooms, approached by a wide corridor down the centre. The upper floor is devoted to the large room, 85 ft. 6 in. by 42 ft., having galleries at each end, with vestries underneath. The gallery fronts are picked out in crimson cloth. The room is roofed in one span; the arched principal hammer-beam roof rising to a height of 38 ft., with a clear span of 42 ft. The building is heated by hot water.

Moston.—The foundation-stone of new day and Sunday schools, in connexion with St. Mary's Church, Moston, has been laid. The schools, which are being built on a plot of land adjoining the north side of the church, have been designed by Messrs. Price & Linklater, of Manchester, and the works are being carried out by Messrs. Herd & Eadie, builders, Cheetham. The building is to contain boys' and girls' schools and one class-room, and it is to accommodate altogether 140 children. It is to be of banded brick, with Gothic brick heads to the windows, and ornamental stone heads to the door, and in style the building will be in character with the church. The total cost of the building and land will be about 500*l*. The plans were laid before the Privy Council, and approved by them.

Hereford.—The foundation-stone of new schools, for the parish of All Saints, has been

laid by Lady Saye and Sele, with some little ceremonial. The fund was opened by a lady parishioner with 500*l*., and other subscriptions soon followed.

PROVINCIAL NEWS.

Spennymoor.—The opening of a covered market for the use of the inhabitants of Spennymoor and district has been celebrated. The dimensions of the market are:—Total length, 160 ft.; width, 37 ft. 6 in. There are fourteen shops within the building, and the open space in the centre affords room for the erection of a couple of rows of portable stalls, and there are also a number of shops outside. Attached to the market, at the west end, will be a town-hall, in market, and an apartment for holding the Local Board meetings. The total estimate for the market was 1,000*l*., but the contracts which have been let out only amount to 809*l*. The building has been erected from the plans of Mr. Byers, surveyor to the Local Board. The market will be used for the ordinary purposes of a meat, fruit, and vegetable market.

Bakewell.—The corner stone of a new vicarage has been laid at Bakewell. The old dilapidated house has vanished. The style of architecture is Gothic, with limestone facings and Stanton gritstone dressings, the interior to be of pitch pine finishings. The architect is Mr. A. Waterhouse, of London and Manchester; the clerk of the works is Mr. J. Dickson. The contractors are Messrs. Thos. Clay & Son, of Manchester. The entire cost of the new vicarage, adjacent buildings, &c., will be upwards of 6,000*l*.

Osley.—The new Mechanics' Hall, the foundation-stone of which was laid on the 19th of June, 1868, is now approaching completion. The stonemasons, joiners, and slaters have all nearly completed their respective contracts, and little remains to be done save the plastering and painting. It is expected that the building will be completed and the new hall opened by the month of November next. The sum of 3,000*l*., subscribed by the members and friends of the institute, has been nearly all expended upon the land and buildings, and it is calculated that an additional sum of 800*l* or 1,000*l* will be required in order to complete the building and to furnish it. The building will afford ample accommodation for carrying on the educational work of the institute.

STAINED GLASS.

Hongkong Cathedral; and Trinity Church, Shanghai.—A stained glass window has just been completed for the cathedral at Hongkong by Messrs. Lavers, Barrand, & Westlake, of London. The donor is Mr. John S. Lapraik, who erects it as a memorial of his late uncle, Mr. Douglas Lapraik. It is intended to be substituted for the existing east window of the cathedral. The window forms five tall lancet lights, surmounted by a rose. The subjects are the Ascension and Crucifixion of our Lord, with some "types." The upper parts of the lancet are occupied by the Virgin Mary and twelve Apostles witnessing the Ascension of our Lord, whose figure, surrounded by angels, fills in the rose-window. Below, and extending across the whole of the centre part of the five lights, is the Crucifixion. Under this, again, are four "types" of a true sacrifice, the Sacrifice of Abel, of Abraham, of Melchisedek, and of Noah; the central opening being occupied with a type of the Ascension, viz., Elijah being taken up to heaven in the fiery chariot. The subjects are all executed from designs in the style prevalent in the large churches of Flanders and Germany during the sixteenth century. The cost of this window, we understand, is about 1,000*l* sterling. The same firm have supplied several windows for the new Trinity Church at Shanghai. These include one to the memory of the late Mr. Fitzroy; another in memory of Mr. Lawrence; and a third, of Mr. Pritchard, R.N. A larger one is now being constructed for the same church as a memorial of the late Rev. John Hobson, many years Consular Chaplain at Shanghai.

St. Peter and St. Paul, Cork.—There is at present on view at the Edinburgh and Leith Stained Glass Works, Leith, a series of windows, just executed by Mr. Barnett for the church of St. Peter and St. Paul, Cork. The windows are four in number, each consisting of two lights,

with tracery above; and, with a fifth window which has already been placed, will complete the apsidal chancel for which they are intended. Each light is designed, so to speak, in five stages. In the lowest is a panel containing the figure of an angel displaying a scroll; next comes the full-length figure of a saint; then another panel, with an angel; over that a second full-length figure; and, finally, a third angel, occupying a panel in the cusped top. The work throughout is ruby glass, variegated with conventional foliage, the latter being supported from stalks, which run up the sides of the lights; and, with their twisting and interlacing, define the various stages and panels. The full-length figures, numbering sixteen in all, comprise the four doctors, — Jerome, Gregory, Ambrose, and Augustine, — with twelve celebrated saints. Each is represented standing in a foliated niche, the attributes by which they are respectively distinguished being indicated. The tracery forming the head of each window consists of two quatrefoils and a large multifoil. The multifolios are occupied with designs representing the Nativity, the Resurrection, the Ascension, and the Descent of the Holy Ghost; while the quatrefoils are filled in with ornament corresponding to that introduced in other parts of the windows.

FROM SCOTLAND.

Edinburgh.—The Edinburgh Infirmary Act, 1870, having now received the Royal assent, the acting committee of contributors to the rebuilding fund have resolved to hand over to the infirmary managers the proceeds of the public subscription. It appears that twenty-nine subscribers, representing 1,605*l*., have asked to have their money returned in consequence of change of site. The amount of contributions is 76,831*l*., and there is a sum of 63,684*l*. in hand. The total funds available for the rebuilding of the infirmary are roughly stated at 160,000*l*. The plans, which have been prepared by Mr. David Bryce, architect for the new infirmary buildings, have been submitted for the inspection of the managers. The design may be generally described as consisting of five or six parallel blocks of building, three stories in height, and about 70 ft. apart, running north and south from Lauriston to the Meadows. These ranges are intersected about midway by the present Watson's Hospital buildings, which are to remain, and by connecting corridors running east and west. The main architectural front is to look northward—that is to say, towards Lauriston.

Leith.—The foundation-stone of a church now being erected for the congregation of St. John's Free Church, Leith, has been laid by Dr. Wilson, Bombay, the Moderator of the General Assembly of the Free Church of Scotland. The church and tower, which are now being erected on a site fronting Charlotte-street and Quality-street, will include the purchase of the site, involve an expenditure of fully 6,000*l*. The larger portion of this sum has been already contributed, and about 1,000*l*. in addition have been promised. There is to be a separate fund for the tower. The church, which is being erected from plans prepared by Mr. John Paterson, architect, Edinburgh, will be well suited for the congregation, notwithstanding the difficulties which the site presents. The limited frontage towards Quality-street has necessitated the adoption of a peculiar arrangement of the church with the offices and hall required by the congregation. The church will be oblong in form, and will have galleries on three sides. On the north side the pulpit will be placed, the wall behind which will be thrown back, and form a three-sided recess or bay. The building will be lighted by windows in the north and south walls, and the ceiling will be finished and ornamented in plaster. The church will be seated for 906 persons, and provision will be made for 150 additional sittings when special occasions require this extra accommodation. The style of architecture to be adopted will be Gothic, and the most prominent feature in the building will be the tower, which is designed to be square in the plan, and will rise to the height of 150 ft. to the terminal point. The tower will be surmounted by an open crown formed with eight moulded ribs, meeting above the centre, and supporting an octagonal terminal and carved finial. The ribs of the crown and the terminal are ornamented with crockets. The main entrance will be placed in the lower stage of the tower at the corner of Quality-street, and there will also

be an entrance at the east end of the building. At both entrances there will be wide stairs leading to the galleries. The Charlotte-street front will have five windows, which will light the area of the church, and an equal number will light the gallery above. The windows have pointed arched heads, and moulded jambs with shafts having bases and carved capitals; and the upper part of the lower set will be filled in with plate tracery. The windows above will be larger than those beneath. They will have double sills, and will be divided by a centre shaft, which supports the tracery with which the heads of the windows are filled. The wall between the windows will be strengthened by buttresses. A string moulding will run down the front of the building beneath the wall head, and rise as a moulded skew to gables, ornamented with finials, formed over the upper windows. Between the gables the wall will be ornamented with sinkings and a moulded cope. The east entrance-door will be of similar design to the first tier of windows. It will be placed in a stair tower which projects from the front line, and will rise to the same height as the walls of the church, and being separately roofed, will form a termination to the design at that part of the building. The west gallery stair will be thrown outside the tower, and form a feature in the entrance towards Quality-street. The remainder of this elevation will consist of the session-house, vestry, &c., above which will be placed a hall for church meetings. The contractors are,—for the mason work, Mr. Bell; joiner work, Mr. Saunders; slater work, Mr. Anderson; plumber work, Stuart & Ray; plastering work, James Sutherland.

Linlithgow.—The plans for the proposed alteration of the parish church, which have been drawn up by Mr. Mathieson, of Her Majesty's Board of Works, Edinburgh, have arrived at Linlithgow. The alterations contemplated are much the same in design, although perhaps differing somewhat in details, as those carried out some time ago in Glasgow Cathedral, and, if gone on with, will make as great a metamorphosis of the old church of St. Michael at Linlithgow as the improvements in Glasgow have made of the cathedral there. The plans will be open for the inspection of the public for a short time, after which it is expected that steps will be taken to have them carried out.

FROM AUSTRALASIA.

South Australia.

Adelaide.—The building which has been erected for accommodation of the local and Insolvent Courts, on the south side of Victoria-square, is a creditable addition to the architecture of the city of Adelaide. The style is of Anglo-Italian character, and it has frontages both to Victoria-square and King William-street. The plans were prepared in the Colonial Architect's office, and the works were carried out by Messrs. Brown & Thompson, of Adelaide, at a total cost of about 13,600*l.* The new police-court and station adjoin that portion fronting to King William-street, and were built, in 1868, by Messrs. Croker & Lawson.

New South Wales.

Sydney, Jc.—The interior of St. Andrew's Cathedral, Sydney, may be said to be completed, although the exterior is still deficient in its towers and pinnacles. The whole building, from the west door to the east window, measures 157 ft., and is 61 ft. across the width. The interior width, measured through the transepts, is 110 ft. The height of the aisle-walls is 30 ft., and of the clearstory 50 ft. There are in all sixteen pillars: two of large dimensions carry the unfinished western towers, four in the centre of the building are to carry the lantern, and the other ten support the ordinary arches of the clearstory. The roof of the building is open and of timber, painted in bright colours, with gold stars on an azure ground, and has a number of ventilators, procured from England, which appear to keep the temperature very regularly even when a large congregation and many lights tend to increase it. There is, however, some difficulty felt here, as in all places where large crowds assemble, in procuring sufficient fresh air without the annoyance of draughts. The *Illustrated Sydney News*, of October 27th, gives a double-page engraved illustration of the interior of this cathedral. The architect is Mr. Blackett.

—A free public library has been inaugurated in Sydney by Earl Belmore.—Rocky Mouth

School, Chatsworth Island, on the Lower Clarence, about forty miles from Grafton, consists of school-house and teacher's residence, built of weather-boards, plastered within, and has a frontage of 70 ft., with a depth of 35 ft.—A new bridge has been erected at Maitland, connecting it with the village of Durham, on the opposite bank of the Hunter River. It is built on iron tubes resting in the bed of the river. The tubular piers were cast in lengths of about 6 ft., and are bolted together and filled with concrete.—At a meeting of the Royal Society of New South Wales, Mr. Charles Mayes, C.E., read an elaborate paper on "The Water Supply of Sydney from George's River and Cook's River." Mr. Mayes is of opinion that Sydney and its suburbs may be supplied equally well, both as to quantity and quality, and at much less cost, than by the level scheme proposed by the commissioners of water supply, from either the George's River alone, or the George's and Cook's Rivers combined. He cannot agree with the proposal to abandon the present water supply; all that is required being an additional supply to keep pace with the increasing demand.

New Zealand.

Oamaru.—The foundation-stone of the Masonic Hall, Oamaru, New Zealand, was laid with Masonic honours on the 8th of December, 1866, by the Right Worshipful John Hyde Harris, Provincial Grand Master of Otago, E.C., the eastern half of the building having been first completed under separate contract, and the western at a later date. The building has been carried out in strict accordance with the original plan, from the designs selected in open competition, of Mr. R. A. Lawson, architect, Dunedin, and under his superintendence throughout. The building covers an area of about 120 ft. by 40 ft. The facade is divided into eleven bays, and in the upper story contains the same number of windows, flanked on either side by projected Corinthian pilasters, with floriated capitals, in the decoration of which the laurel and acanthus leaves are principally used. In the lower story eight of the bays are occupied by windows, and the remaining three by the entrances to the building. These doorways are surmounted by projecting balustrades, borne on coupled carved trusses, the main central doorway, which gives access to the hall, being flanked by double columns, and supported by relieved circular Doric columns, detached, the entrance-doors being considerably recessed. The building is finished with the characteristic cornices and enrichments of the Corinthian style. The hall occupies the whole of the upper floor of the eastern wing. The hotel portion of the building, known as the Star and Garter, is a commodious structure. The whole of the building is constructed of the Oamaru stone, a material now rising in general estimation as a building stone. When first quarried (which it can be procured in blocks of any reasonable size up to nearly 50 ft. in length), it can be sawn and planed and worked almost as readily as the sculptor's clay, but it hardens on exposure, and has a certain power of resistance and endurance.

Books Received.

The Manual of Colours and Dye Wares. By J. W. SLATER. London: Lockwood & Co.

THE object of this alphabetically-arranged manual is to furnish, in brief space, an account of the chemical products and natural wares used in dyeing, printing, and accessory arts,—their properties, their applications, the means of ascertaining their respective values, and of detecting the impurities which may be present. Information of this kind seems to be needed both by makers, dealers, and consumers. The author relies more upon strictly chemical methods, as distinguished from rule-of-thumb procedures. He believes there are means of forging those outward features of colour, touch, taste, &c., upon which so many rely. It has not been any part of the plan of the book to give receipts either for the manufacture of colours and mordants, or for their applications in dyeing and printing, as there are already books which profess to do so. Few persons, however, are so generous as to reveal to the world the best and newest processes in their possession, as the author remarks, and he himself is no exception to the rule.

In the preface the author alludes to an alleged discovery, which is to rival the tar colours in brilliance and purity.

VARIORUM.

THE new number of the *Quarterly* will be read through by nearly all who take it up, the whole contents having a general interest. Mr. Disraeli's "Lothair" is laughed at from beginning to end; Lord Stanhope is corrected for erroneous opinions concerning the reign of Queen Anne; and the Police of London are justly praised for the admirable way in which, as a rule, they do their duty. Much learning is shown in the article on Professor Max Müller's translation of the "Rig Veda," the sacred hymns of the Brahmans, and some in the notice of Baths and Bathing-places, ancient and modern; while the article on letter-writing, though incomplete, is full of pleasant gossip. We fully agree with the writer in his leaning towards female fingers and female instinct, when estimating the relative cleverness of the sexes in the practice of this delightful art. The power should be striven for by both sexes. Every one may attain the ability of writing, at any rate, a neat, sensible letter in legible hand, and all young people should view the attainment as a necessity. "I think it is as improper and indecorous," says Landor's Pericles to Aspasia, "to write a stupid or a silly note to you, as one in a bad hand, or on coarse paper. Familiarity ought to have a worse name, if it relaxes in its attentiveness to please."—In *The Journal of the Royal Historical and Archaeological Association of Ireland* Sir W. R. Wilde is giving an exhaustive account of Gabriel Beranger and his labours in the cause of Irish art, literature, and antiquities from 1760 to 1780.—"Lectures on Economic Science." Longmans & Co. These lectures were delivered under the auspices of the Committee on Labour and Capital appointed by the Social Science Association. Two of them are by Dr. Hodgson; one on "The True Scope of Economic Science," and the other on "Competition." There is one by Mr. F. Hill on the "Identity of Interests of Employers and Workpeople;" another on "Reciprocity," by Mr. R. H. Hutton; and one by Mr. W. S. Jevons on "Industrial Partnerships." It makes a valuable little book.—"The Civil Service Orthography: a Handy Book of English Spelling." By E. S. H. B. London: Lockwood & Co. One would think that candidates for the Civil Service must at least be able to spell; but it is too true that there are not a few exceptions in which the free and easy mode of spelling adopted by our ancestors still prevails; but as ours are not the days in which either a Shakespeare or any one else in respectable society would be allowed to give an elegant variation even to the spelling of his own name, candidates for the Civil Service must get over this little difficulty in the outset, and learn to spell with accuracy. The author of the book under notice appears to address it specially to candidates for the Civil and other services, as well as for the use of schools. It contains some curious rhymes, in the "Thirty days hath September" style, which may facilitate a knowledge of those irregular variations of spelling in words of similar sound but different meaning which abound in the English tongue. Thus:—

"Spell t-a-r-o, tare, that grows;
But t-e-a-r, tear, rend things or clothes.
Spell tear with a, 'the tear of grief that flows;
Tier with an i, one tier of many rows."

Miscellaneous.

Royal Archaeological Institute.—The annual congress is this year fixed for Leicester, and the inaugural meeting will be held in the Guildhall of this town on the 26th inst. The president will be Lord Talbot de Malahide. On Wednesday, under the Presidency of Archdeacon Trollope, the section of antiquities will be opened with visits made to the Mediaeval churches of the town, the Norman hall of the ancient castle, the "Newarke" of the Castle, numerous Roman pavements, the noted "Jewry Wall," &c. On Thursday there will be excursions to Ashby-de-la-Zouch, Tutbury, Tamworth, and Polesworth, and the Mayor's *conversazione* in the evening. On Friday excursions to Kirby Muxloe Castle, and a *conversazione* in the Museum. On Saturday visits will be made to Groby, the ruins in Bradgate Park; Ulverscroft Priory; Beaumanor, where Mr. Herrick has invited the party to luncheon; and to Grace Dieu. On Monday the excursion will be to Melton Mowbray. In the evening a *conversazione* in the Museum.

Value of Property.—Messrs. Spelman recently offered for sale at the Crown Hotel, Lowestoft, a farm situate at Kessingland, comprising house, garden, orchard, barn, &c., together with 90a. 2r. 30p. of productive arable and pasture land, 66 acres of which are exempt from great tithes, and freehold, with the exception of 7a. 1r. 0p. After a spirited bidding, the property was knocked down to Mr. Robertson, of Matford Bridge, for 4,750l. — On the same day, Mr. George Turner submitted to competition at the Suffolk Hotel, the absolute reversion to a sum of 300l., secured by mortgage upon freehold property, situate in Lowestoft, payable upon the death of a lady residing in this town, now in her 74th year. It was purchased by Mr. T. S. Allerton, at 160l. — Messrs. Bruton & Knowles sold by auction, at Westbury-on-Severn, the freehold property belonging to the late Mr. Roan, when, after a sharp competition, the lots were sold at the following prices:—Lot 1—2a. 2r. 2p. of pasture orcharding, 530l., Mr. Sergeant purchaser; Lot 2—2r. 5p. of pasture orcharding, 110l., Mr. Mayo, purchaser; Lot 3—1a. 32p. house and orchard, 300l., Mrs. Roan, purchaser; Lot 4—2a. 8p. of pasture orcharding, 290l., Mr. Gough, purchaser; Lot 5—1a. 2r. 27p. of pasture orcharding, 235l., Mr. Ellis, purchaser; Lot 6—1a. 3r. 26p. of pasture, 150l., Mr. John Wintle purchaser. At the same time Messrs. Bruton & Knowles also sold by auction a piece of pasture land at the Dinney to Mr. Holtham, for 570l., and 2 acres of land near thereto to Mr. Vaile, for 185l., and a wharf, to Mr. Coleman, for 80l. The sale was numerously attended.

Extensive Ironworks at Sunderland.—New ironworks to be established on the Hylton Castle Estate are in progress of erection. A tall chimney-stack, which is to reach the ultimate height of 200 ft., is being reared on the river-bank. Occupying an extensive area round the stack are masses of solid masonry, of brick and concrete, to form beds for the ponderous machinery which will be employed in the new works, and nearer the river bricks are being manufactured from a bed of clay. The initials on the chimney indicate that these are the ironworks of Messrs. Oswald & Co. Some portions of the foundations are now ready for their superstructures of machinery, which are being constructed principally in Staffordshire, and will be erected under the superintendence of Mr. Appleton, formerly of Mr. Richardson's works at Hartlepool. The cost of the new works and plant, when completed, will probably not be far short of 100,000l.; and, though at first they will afford employment for 400 men, it is probable that ultimately not fewer than 1,800 ironworkers will be employed there. This will involve the settlement of a large population and the creation of a new town round the Farm House. Already, in a field to the west, a commencement has been made with houses for the manager and foreman, and seventy workmen's cottages; but this number will, no doubt, have to be increased very considerably. The ironstone will be brought round from Cleveland in screw steam vessels, and, as at Jarrow, delivered right into the works. For this purpose a sufficient depth of water must be provided by dredging.

A New Steam Sawmill.—A new sort of circular sawmill has recently been started in one of the forests in the vicinity of Worcester, United States, and is described in the *American Railway Times*. The saw (some 5 ft. diameter) is placed directly upon the crank-shaft of the engine, thus doing away with the expensive and troublesome belt usually employed. The cylinder is placed vertically directly above the crank, at the top of a pedestal-like frame, and works a 7-in. piston upon a 5-inch crank, by means of the usual connexions. A 600-pound fly-wheel is placed upon the same shaft with the saw. This is a plate-wheel, and is turned all over, to insure perfect balance. The improved log-carriage and setting device is employed, and has a sufficient variety of feeds to answer all emergencies. This is said to be a simple and satisfactory portable sawmill.

Proposed New Cottage Hospital, Marlborough.—It is proposed to erect a new cottage hospital here, the present building being insufficient in size. The plans are immature, but we understand the design is to afford accommodation for twenty beds. The cost is estimated at 3,000l. Towards this amount, the Marquis of Alibury has, besides giving the site, started a subscription list by the donation of 1,000l. The marchioness has added 300l.

The Knightsbridge Barracks.—On a vote of 700,400l. for the works and repairs of the cavalry barracks at home and abroad, Colonel Gray complained of the item of 5,000l. for the repairs of Knightsbridge Barracks, and moved the reduction of the vote by 4,000l. Mr. Cardwell intimated that he would withdraw the item altogether. Lord Bury wished to know whether the idea of removing Knightsbridge Barracks had been abandoned. Mr. Cardwell said that he did not know that such a proposal had ever been entertained. Sir J. Pakington said that, when in office, he had after much consideration, determined that the barracks should remain where they were, as the objections to them were made chiefly by the house-owners in the vicinity who had built their houses after the barracks had been erected. He wished to know whether the reduction of the vote meant that the barracks were to be given up. Mr. Cardwell only wished to place himself in the same position in that respect as his predecessor. He had no plan on the subject, and, until one was adopted, he could not meet the wishes of the inhabitants of that neighbourhood. The vote, having been reduced by 5,000l., was then agreed to.

Fires.—The galvanising factory at the Chatham Dockyard caught fire recently, in consequence of the composition boiling over. The building was entirely gutted, but the fire was extinguished before it had communicated with the large store adjoining. The damage is about 500l. — Two fires have occurred in Glasgow, which have, unitedly, caused damage to the extent of 20,000l. The first happened in a dyewood-mill, which was rapidly burned to the ground, together with its valuable contents. The other, and most serious, occurred in the stores of William Connal & Company, the most extensive storekeepers in Glasgow. The department in which the fire broke out contained immense quantities of tar, logwood, guano, and sulphur, which burned for a long time with great fury. The greater part of the tar found its way into the Clyde, and completely inundated a large part of Anderston Quay. There were upwards of 3,000 barrels of tar, and several tons of guano, wholly or in great part destroyed. The smell of the sulphur and tar, and the smoke from the fire, were seen and felt nearly over the whole of the city. In both cases the property is covered by insurance.

Steam Rollers.—The Surveyor to the Poplar District Board of Works, in presenting his usual reports, specially called attention to a report on one of Messrs. Aveling & Porter's steam rollers for consolidating the roads. The report states that nearly 57½ tons of material were consolidated per day. The maximum quantity of broken granite and Bombay stone used in one year throughout the district is 4,723 tons, which would employ the roller in question 82½ days, or a little more than three months in the year. The surveyor is of opinion that for the present it is better to hire than to purchase the roller. As to the advisability of using it, he said there could not be two opinions. The short experience they had had of its utility was very satisfactory, and the additional cost over the old system of repairing is not 1½d. per square yard, which would be more than compensated for when the work was once done, over and above the decided advantage experienced to the carriage traffic, and, he might add, to the public generally. The chairman suggested the sending of a communication embodying their experience of the use of steam rollers to the Commercial-road Trustees Board, and the clerk was desired to carry out the suggestion forthwith.

New Drinking Fountain, Malvern.—A boon has been bestowed on the neighbourhood of the Wyche by the presentation of a public drinking-fountain, by Mr. W. H. Ryland. It has been named "The Royal Malvern Well," on account of the patronage accorded by her Majesty to a school recently erected at Bewdley, by the present benefactor of the Wyche. The spring yields seven gallons per minute, which is pronounced to be equal in purity to any in the range of the hills. Monday last was the day fixed for the opening ceremony.

International Exhibition Building.—Messrs. Lucas, having taken the contract for the formation of a subway from the International Exhibition-buildings, and beneath the Cromwell-road, to the South Kensington Station of the Metropolitan District Railway, have applied for leave from the Kensington Vestry to reconstruct in iron the public sewer in Alfred-place West.

Lead Poisoning.—It is well known that workers in lead factories are apt, in the course of time, to suffer from lead poisoning; in fact, a constant series of patients proceed from the lead factories to the hospitals of London. In France the evil effects of the mineral were usually prevented by giving the workpeople a draught containing dilute sulphuric acid, but it has now been discovered that regular potations of milk have an equally good effect. Dr. H. Schwarz, of Breslau, has discovered (re-discovered, we might more properly say) a means by which the portion of the lead forming the interior surface of the water-pipe may be converted into an insoluble sulphide, the natural consequence being that the water passing through will be as free from contamination as if glass were used. He merely passes a strong solution of the sulphide of an alkali through the pipe to be acted upon, and the process is completed. This solution, which is either a sulphide of potassium or of sodium, is used at a temperature of about 212° Fahr., and is allowed to act upon the metal for from ten to fifteen minutes. It is stated that in practice a boiling solution of caustic soda and sulphur is found to answer every purpose.

Metropolitan Contractors' Benevolent Institution.—The annual festival in support of this charity was held on Wednesday at the Crystal Palace, under the chairmanship of Mr. James Scully, one of the vice-presidents. The institution was founded in 1864, for the relief of persons overtaken by distress who have occupied the position of metropolitan contractors and master town-carmen. In the former category are comprised parochial dust and water contractors and contractors for building excavations; and in the latter, the conveyors of produce of any kind from one dock or locality to another. Mr. James Brady has liberally given three acres of well and pleasantly-situated freehold land for the erection of an asylum for the reception of distressed, aged, and infirm members of the trade or their widows; and liberal promises of contributions have been made towards the building fund. The invested relief capital now amounts to upwards of 2,000l.; and when it shall have turned 3,000l., it is intended to entertain proposals for the election of pensioners.

The Proposed Bradford Town-hall.—The strip of land between Chapel-lane and New Market-street is at last to be utilised. The Town Council have unanimously agreed to accept the tender of Messrs. Ives, of Shipley, to erect the Town-hall, within two years, for a sum of 43,730l. The amount of the contract exceeds the sum which the council had decided to expend on the building by nearly 4,000l.; but the contract was agreed to without demur, and practically without discussion; the reason being that the additional expenditure is, in point of fact, a piece of true economy. The council have agreed to pay 3,200l. additional in order to obtain the best building stone, and 775l. to substitute oak for deal as the material of the wooden fittings of the structure.

The Thames Embankment.—Lord O. Fitzgerald, Controller of the Household, appeared in the House of Commons on Tuesday with an answer from her Majesty, in reply to the address moved for a few nights ago by the member for Westminster (Mr. W. H. Smith). The reply stated that as no public office could be erected on the Thames Embankment or elsewhere without a vote of the House of Commons, the House had in itself the power of preventing any such erection. It was clear, therefore, that the Government would not move such a vote unless they were of opinion that it was likely to be received with favour.

New Infirmary for Halifax.—It was decided, at a meeting of the governors of the Halifax Infirmary, that a new building, in which to carry on the operations of the charity, should be erected on a fresh site. This decision secures the noble donation of 10,000l., which Sir F. Crossley promised, on condition of the enlarged institution being erected on a new site. The spot selected for the building is on the west side of the People's Park, the gift of Sir F. Crossley; and the expenditure upon the land and building will be about 16,000l.

Clock Tower for Grimsby.—The Mayor of Grimsby, Mr. E. Bannister, has offered to erect an ornamental tower, with a clock, in the new market-place. A plan of the tower is to be laid before the council for their consideration.

Drinking Fountains and Cattle Troughs.—A drinking-trough for cattle, with a fountain for human beings attached to it, the gift of Miss Burdett Coutts, has been opened at Columbia Market, by the Metropolitan Drinking Fountain and Cattle Trough Association. Another trough, the gift of Mrs. Hambleton, has just been erected by the same association on Haverstock-hill; and Mr. H. Edwards, M.P. for Weymouth, has also signified his intention to present one, and has requested the secretary to procure a suitable site.

Catalogue of the Dickens Sale.—Messrs. Field & Tuer have published a catalogue of the pictures and other works of art, and no art, which belonged to the late Mr. Dickens, with the names of purchasers and the prices realised,—the "enormous prices," as they correctly enough say on the cover. It will form an interesting evidence of the popularity of the regretted author at the time of his death.

New Harbour Works and Improvements in the Isle of Man.—At the sittings of the Man Legislature held lately, it was decided that the sum of 14,200l. should be expended upon the purchase of the site, and the erection and furniture of new court-houses and house of assembly at Douglas; and the Lieut.-Governor was requested to procure plans from different eminent architects, the old plans being entirely discarded.

Report on Liverpool Privies.—Dr. French has submitted a report on this subject to the Liverpool Health Committee, in accordance with an order of the town council. The report treats of the situations in which such places are, in his opinion, dangerous to health, with the reasons for such opinions. The report was ordered to be printed, and distributed to the members of council.

An Odd Challenge.—Mr. Nathan Hughes, who painted, in twenty-four days, a picture of the "Riot in Hyde Park," has challenged the members of the Royal Academy "to paint with him against time the best work, combining rapidity and excellence, for 1,000l. a side, before any large general audience empowered to decide the question by ballot." He can scarcely expect that the challenge will be accepted.

Building Land, Kensington.—The Kensington News says,—"The residence of the late Sir James South, bart., the Observatory, on Campden-hill, will very likely pass into the hands of the speculative builders. The grounds attached to the house are very beautiful and rather extensive. The site is computed to be worth 12,000l. an acre."

Lightning Conductors.—A few days ago lightning struck the powder magazine of Santo-Spirito at Venice, where 600,000 lb. of that material are stored. The conductor received the electric discharge, and its top was literally melted away, and the whole length twisted, but no further damage was done.

Buxton Improvement Company.—The plan of the walks and proposed erections for the new gardens at Buxton, has been submitted to the directors by Mr. Milner, of Norwood, the landscape gardener engaged to carry out the works. The plan, for a few days past, has been on view at the Court-house, Buxton.

The Institution of Civil Engineers.—The list of members, corrected to July 1, 1870, and just now published, contains the names and addresses of 16 honorary members, 702 members, 999 associates, and 177 students; making together 1894 of all classes.

Petersfield Cottage Hospital Competition.—The committee found much difficulty in selecting the best from thirty-nine plans sent in, and ultimately referred to Mr. Hardwick, of London. He chose one by Mr. Hunt, of Duke-street, Adelphi.

Stockport Borough Surveyorship.—The local finance committee, it appears, have increased the borough surveyor's salary from 120l. to 150l. per annum, other piecemeal resolutions in reference thereto having been rescinded.

Exhibition of Holbein's Works at Dresden.—It is intended to hold at Dresden, from the 15th of August to the 15th of October next, an exhibition of the works of the great painter, Hans Holbein.

Hinton Martel Church.—We are asked to state that the carving work in this church was entrusted to Mr. Bolton, and was executed under his direct superintendence.

TENDERS.

For mansion, with billiard-room, stabling, with rooms for coachman and gardener, also fences, entrance-gates, &c., at Putney. Mr. Herbert Ford, architect:—

Gammou	£8,189 0 0
Easton	8,035 0 0
Simpson	7,074 0 0
Henshaw	7,006 0 0
Williams	7,882 0 0
Blease	7,848 0 0
Chappel	7,741 0 0
Dove	7,595 0 0
Hobson	7,587 0 0
Avis	7,472 0 0
Conder	7,465 0 0
Brass	7,285 0 0
Scrivener & White	7,178 0 0
Adamson	7,089 0 0
Tongue (accepted)	6,973 13 6

For six cottages at Leytonstone, Essex, for Mr. Johns. Mr. Iron, architect:—

Brown	£1,250 0 0
Wood	1,220 0 0
Moyle	1,165 0 0
Hall	1,154 0 0
Pitcher	1,135 0 0
J. Brown	1,075 0 0
Johnston	1,050 0 0

For two cottages at Leytonstone, Essex, for Mr. McDonald. Mr. Iron, architect:—

Brown	£395 0 0
Pitcher	390 0 0
Hall	372 0 0
Wood	339 0 0
Moyle	356 0 0
Johnston	332 0 0
J. Brown	320 0 0

For cottages in Peverney-road, Eastbourne, for Mr. Edward Hurrell. Mr. Robert K. Blessey, architect:—

Bradford	£700 0 0
Ford & Attwood	730 0 0
Francis	700 0 0
Hepple	687 0 0
Housom	668 0 0
Skinner (accepted)	610 0 0

For building Dunwood Lodge, Leek, Staffordshire, for Mr. Thomas Hulme. Messrs. K. Scrivener & Son, architects. Quantities supplied:—

Stringer	£3,631 0 0
Fuskins	3,458 0 0
Wade, Brothers	3,460 0 0
Mathews	3,360 0 0
Brindley & Crutchlow	3,350 0 0
Whitmore	3,350 0 0
Bennett & Cork	3,320 0 0
Bowden (accepted)	3,185 0 0

For villa residence at Newcastle-under-Lyme. Messrs. R. Scrivener & Son, architects. Quantities supplied:—

Batton & Meadow	£282 0 0
Harvey	889 0 0
Bowden	840 0 0
Harvey & Co.	838 19 0
Bennett & Cook	820 0 0
Bailey	815 0 0
Barlow (accepted)	780 0 0

Accepted for refreshment-rooms, Hanley Hotel. Messrs. R. Scrivener & Son, architects:—

Bennett & Cook	£213 0 0
Bickley	162 12 0

For workshops, Haverstock-hill, for Mr. Nott. Mr. J. R. Francis, architect:—

Taylor	£630 0 0
Hailey	747 0 0
Richards	719 0 0
Hookham	650 0 0
Ball	560 0 0

For additions to house, Thames-passage, Poplar, for Mr. John Garford. Mr. J. W. Morris, architect:—

Heiser	£230 0 0
Sheffield	182 0 0
Allen	183 8 0
Abraham	179 0 0
Harrop & Goulder	174 0 0
Atherton & Latta (accepted)	163 0 0

For alterations and enlargement of Forres House. Mr. John W. Morris, architect:—

Ennor	£1,170 0 0
Watts	1,168 0 0
Kilby	1,167 0 0
Wicks, Bangs, & Co.	1,149 0 0
Abraham	1,137 0 0
Reed	1,048 0 0
Hill, Keddell, & Waidram	987 0 0
Sheffield	973 0 0
Atherton & Latta (accepted)	920 0 0

For works to Episcopal Chapel and Girls' School, Palestine-place, Cambridge-heath, for the London Society for Promoting Christianity amongst the Jews:—

Cole	£655 0 0
Manley & Rogers	635 0 0
Newman & Mann	594 0 0
Carter & Son (accepted)	477 0 0

For new police cells, Town-hall, Brighton. Mr. P. C. Lockwood, borough surveyor. Quantities by Mr. Lansdown:—

Lockyer	£2,400 0 0
Cheeman	2,300 0 0
Nightingale	2,273 0 0
Blackmore (accepted)	2,210 0 0

For alterations to 6, Holland Park, W., for Mr. Arthur Cohen. Messrs. Salomons & Jones, architects. Quantities by Mr. Bagg:—

Wilkinson	£402 0 0
Rudkin	311 0 0
Jackson & Shaw	310 0 0
Whittaker	265 0 0
Sharpington & Cole (accepted)	263 0 0
Parsons & Telling	235 0 0

For aquarium to be built at the Crystal Palace, Sydenham, for the Crystal Palace Aquarium Company (Limited). Mr. C. H. Driver, architect. Quantities supplied:—

Bywater	£7,690 0 0
Nixon	7,390 0 0
Brass	5,984 0 0
Higgs	6,929 0 0
Chappell	6,783 0 0
Jackson & Shaw	6,640 0 0
Perry	6,577 0 0

For four houses in Blue Anchor-lane, Bermondsey, for Messrs. Courage. Mr. Geo. Elkington, architect:—

Falkner	£1,285 10 0
Kent	1,195 0 0
Bullers	915 0 0
Deavin (accepted)	875 0 0

For erecting two shops in the High-street, Harrow-on-the-Hill, for Mr. W. Winkley. Messrs. E. Habershon & Brock, architects:—

Haynes	£1,345 0 0
Manley & Rogers	1,248 0 0
Woodbridge	1,094 0 0
Falkner	1,066 0 0
Crisp	894 0 0
Kindell (accepted)	970 0 0

For the erection of St. Mathew's Vicarage, New Kent-road, Newington, Surrey, for the Rev. W. Y. Thomson. Messrs. Henry Jarvis & Son, architects:—

Gammou & Sons	£2,267 0 0
Marland & Sons	2,222 0 0
Downs	2,196 0 0
Tarrant	2,186 0 0
Rider	2,180 0 0
Collis	2,164 0 0
Cooke & Green	2,143 0 0
Thompson	2,130 0 0
Henshaw	2,106 0 0
Shepherd	2,025 0 0

For furnishing and carpeting the board-room, and fitting Venetian blinds throughout the building of the new Poplar District Board of Works Offices, from the designs and specifications of Messrs. Hills & Fletcher and Messrs. Arthur & C. Harston, joint architects:—

For Furnishing Board-room.

Cutting & Son	£550 0 0
Gibbs & Son	489 10 0
Shaw & Son	485 4 0
Rough & Son	468 13 8
Atkinson & Co.	450 0 0
Fox & Co.	437 9 0
Barnes & Co.	437 9 0
Coleman	437 0 0
Lamaeraft	390 0 0

For Carpeting Board-room.

Shores & Co.	228 0 0
Shaw & Son	166 17 0
Rough & Son	166 9 9
Gibbs & Son	152 17 0
Fox & Co.	152 0 0
Atkinson & Co.	147 14 0
Barnes & Co.	146 15 0
Davis	146 10 0
Coleman	145 0 0
Crane & Co.	143 0 0

For Fitting the Windows throughout the Building with Venetian Blinds.

Fox & Co.	77 17 6
Coleman	69 0 0
Atkinson & Co.	65 3 10
Crane & Co.	64 10 0
Gibbs & Son	63 5 0
Barnes & Co.	62 14 0
Askans & Co.	57 4 0
Fox & Co.	56 15 0
Simpson	54 13 4

NOTICE.

By the gracious permission of her Majesty the Queen, we are enabled to announce that the next number of the *Builder* will contain a Double-page View of the Interior of the Royal Mausoleum, Frogmore.

TO CORRESPONDENTS.

F. C. R.—C. R.—W. W.—L.—J. R.—J.—C. M.—Mr. P.—T. H.—A.—T. Y.—J. A. F.—E. I. A.—H. & B.—J. T. B.—J. R.—J. G.—T. W. G.—T. W.—J. & Son.—S. W. A.—J. W. M.—Another of the Four.—W. R. D. (not easy to prove a negative).

We are compelled to decline pointing out books and giving addresses.

All statements of facts, lists of Tenders, &c., must be accompanied by the name and address of the sender, not necessarily for publication.

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

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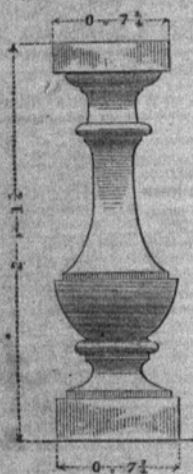
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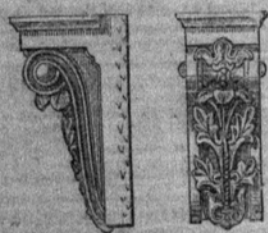
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DENTAL STRING COURSE.



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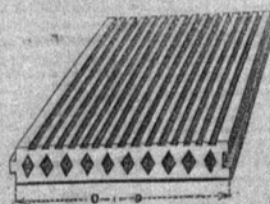
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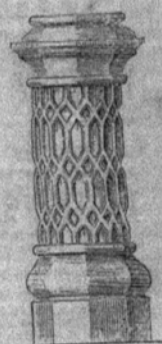
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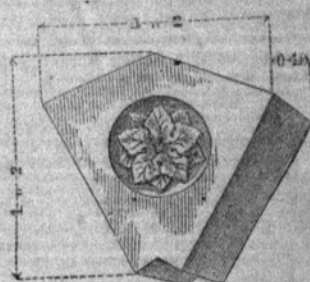
AIR BRICK.



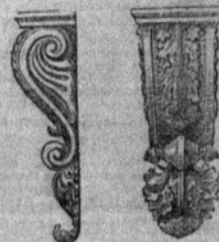
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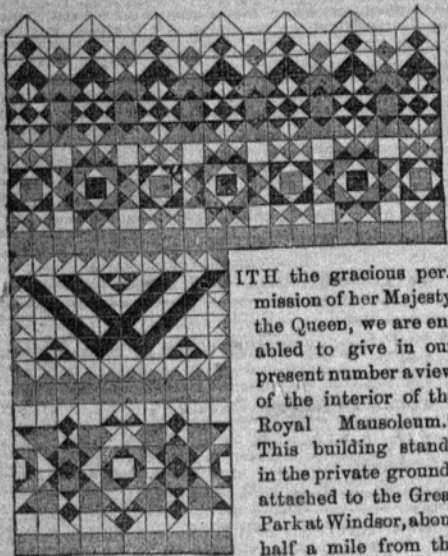
Specimens on view at the Architectural Museum, Conduit-street, W. and at the Crystal Palace.

DOULTON & CO. HIGH STREET, LAMBETH, LONDON.

The Builder.

VOL. XXVIII.—No. 1434.

The Royal Mausoleum, Frogmore.



WITH the gracious permission of her Majesty the Queen, we are enabled to give in our present number a view of the interior of the Royal Mausoleum.* This building stands in the private grounds attached to the Great Park at Windsor, about half a mile from the south terrace of the Castle, and about 50 yards from the mausoleum erected by her Majesty to the memory of the late Duchess of Kent. In a former volume of the *Builder* we have given a view of the exterior of this building, and a plan;† so it will be unnecessary now to do more than state that it is a cruciform edifice surmounted with an octagonal lantern, and is in the Romanesque style of architecture. As will be seen from our view, the interior does not partake of the same style, but is carried out in the Italian Cinque-cento style. Not only are the exterior and interior of the building in different styles of architecture, but they are also the work of different architects; for, while the exterior is entirely the work of Mr. Humbert, the interior is carried out mainly from the designs of Professor Ludwic Grüner, of Dresden, whose work upon Italian decoration is well known. In the beautiful arabesques which adorn this monumental chapel he has shown how thoroughly he has mastered the principles of such decoration.

The monument in the centre of the Mausoleum is from the designs of the late Baron Marochetti, and the recumbent figure which occupies the left-hand space (when standing at the foot of the monument) was the last work of that sculptor. We need hardly state that this effigy represents the late Prince Consort. The space to the right hand is left vacant, and that it may very long continue to be so is the earnest prayer of every Englishman. The tomb itself is a genuine "sarcophagus," wrought out of a single block of grey granite. We believe that this is the largest block of granite in existence without a flaw in it. The body of the Prince rests within it, and upon the left-hand side of the monument is the following inscription:—

"FRANCIS ALBERT AUGUSTUS CHARLES
EMANUEL,
DUKE OF SAXONY, PRINCE OF SAXE-COBURG AND GOTHA,
PRINCE CONSORT;
SECOND SON OF ERNEST I., REIGNING DUKE OF
SAXE-COBURG AND GOTHA;
BORN AT THE ROSENTHAL, NEAR COBURG, AUG. 26, 1819;
MARRIED FEB. 10, 1840, TO
VICTORIA,
QUEEN OF GREAT BRITAIN AND IRELAND;
DIED AT WINDSOR DEC. 14, 1861."

The sarcophagus is a beautiful specimen of dark grey (or blue) Aberdeen granite from the Cairngall quarries. Owing to the unusual magnitude required, great difficulty was experienced by Messrs. Macdonald & Field, of Aberdeen, in procuring two suitable blocks. Many were examined and rejected, and many months elapsed before stones fit for the purpose could be found.

The sarcophagus rests upon a base of polished black marble from Belgium, which the late King had promised as a contribution to the Mausoleum, and which was subsequently presented by the present King of the Belgians.

At each angle is a large angel of bronze, also executed by Marochetti.

The walls of the Mausoleum are lined with costly and beautiful marbles, except the spaces which are occupied by the arabesques before mentioned. The dado is chiefly Sienna marble; the walls red Portugal marble (Rouge Royal), a portion of which was a present from the King of Portugal to the late Prince Consort. The columns, strings, and cornices are white statuary marble. The capitals, bases, and other enrichments are of bronze gilt. The pendentives supporting the lantern are decorated with mosaic pictures, and the vault of the lantern is painted blue, and powdered with gilt stars.

The angels attached to the vaulting ribs are likewise gilt. The vaults of the projecting portions, or transepts (if we may so call them), are divided by richly-moulded ribs into panels filled with bas-reliefs and paintings illustrative of different passages in the Scriptures. In this portion of the building the texts describing the subjects are in German; everywhere else they are in English. The ends of these wings or transepts will eventually be decorated with large paintings; at present only one is completed.

The wing opposite to the head of the monument contains a small altar of marble and mosaic, and above it is the only executed picture, representing the "Resurrection." The pavement of the chapel is a very fine example of mosaic work, composed of many kinds of marble very highly polished. The great niches below the pendentives will contain statues of four prophets, but at present only two of these are executed. The windows of the lantern and wings of the building are filled with glass in patterns, and the armorial bearings of the Saxe-Coburg family; and the windows of the aisle or passage which connects the wings of the building are adorned with rich stained glass: each window contains a large figure of an angel playing some musical instrument. All the glass was executed in Munich. The arabesques and other painted decorations were carried out under the management of Mr. Homann. The bases and capitals of the pilasters, and the bronze gilt enrichments in the cornices, and elsewhere, are by Barbedienne, of Paris, as are also the four large pendent lamps.

The sketches and drawings for every part of the building were systematically submitted to the Queen; who always took the greatest interest in them, continually making important improvements and throwing out very valuable suggestions; in these her Majesty was often seconded by the Crown Princess of Prussia and the Princess Alice. One of the paintings on the ceiling (that in the entrance transept or chapel) is the work of the Crown Princess.

The Prince of Wales contributed very handsomely to the cost of the edifice.

Our engraving is from a drawing made on the spot at the command of her Majesty.

NOTES FROM THE SHOWS AT OXFORD.

THE Royal Agricultural Society of England may be presumed to be an English institution, embracing "the principality," and not excluding either Scotland, which has its own more venerable society, "the Highland and Agricultural," or Ireland, which has also its Royal Agricultural Society. The English society is not designed to be either metropolitan or local, but national. The peripatetic character of the shows of the society, and of the Royal Horticultural Society of England, which usually travels with it, makes these exhibitions local, to a considerable extent, and gives them a different local complexion each successive year. Last year, for instance, a number of Manchester and Lancashire nobility, gentry, and merchants, who are enthusiastic and successful cultivators of flowers, fruits, and other vegetable productions, took advantage of the Exhibition being in their immediate neighbourhood, and exhibited. So it was also with traders and producers of other kinds. Exhibitors do not care to encounter such distances as between Oxford and Newcastle-on-Tyne, or between Plymouth and Leicester. This year, as on former occasions, local exhibitors have been numerous and fairly successful in various classes.

Arrived in Oxford, the first of the exhibitions in order of the visitor's progress, if not in importance, was that of the Royal Horticultural Society, kindly and very suitably accommodated in the grounds adjoining the Radcliffe Observatory, which is reached by St. Giles's-street,—for part of its length, one of the widest streets in the United Kingdom. The beauty of the garden grounds in front of the Radcliffe Infirmary, close to the entrance to the exhibition, could not fail to arrest the attention of every visitor.

As on former occasions, the exhibition embraced flowers, fruits, plants, and vegetables, arranged in numerous classes in a number of spacious tents and marquees. One of the canvas coverings, circular, and 100 ft. diameter, with appropriate height, was supplied by Mr. Unité, of London, and contained a splendid collection of ornamental plants. Three other tents were 270 ft., 250 ft., and 170 ft. long respectively, by 30 ft. wide. There were other four smaller tents. In addition to the exhibits under canvass, there was a good display in the open air of horticultural appliances in glass, iron, and earthenware. There were 120 classes, for which one, two, and three premiums were offered by the Royal Horticultural Society, and about half as many for members of the Royal Oxfordshire Horticultural Society. The local amateurs and professional growers held their own very creditably in the competition, and took a fair proportion of the prizes. One of the guardians of the tents informed us that when some of the exhibitors saw what Oxford exhibitors had to show, they retired from the competition. The statement was received *cum grano salis*.

It is at the Horticultural as at the Agricultural Society's show, every year, irrespective of the locality of the annual exhibition, York or Yeovil, Plymouth or Peterborough; a number of laudably ambitious and enterprising exhibitors appear in force, to maintain their ground, if not to advance their reputation; and so accordingly appearances were put in and prizes taken in numerous instances by Messrs. B. S. Williams, of Upper Holloway; C. Turner, Slough; Cole & Sons, Withington, Manchester; Bell & Thorp, Stratford-on-Avon; J. House, Peterborough; Rolliason & Sons, Tooting; J. E. Mapplebeck, Woodfield; Moseley, Birmingham; Veitch & Sons, Chelsea; and other nurserymen. The Mayor of Oxford gave numerous prizes, and as his own gardener took about as many, and as much, although not exactly in the same classes. The classes were, upon the whole, well represented, and some of them very fully; among these, the graces in ferns, British and foreign; the beauties of the floral world in roses (for which Mr. Turner was conspicuous), carnations which Mr. Turner was conspicuous, and and picotees, pelargoniums, petunias, &c., and the droles in orchids. The gardeners of the gentry fought a good fight, and shared the honours, for the best fruits as well as flowers. Messrs. Jackman, of Woking, Surrey, had it all their own way with their fine hardy clematises.

In the open many interesting exhibits demanded attention, among which may be named the very large display of admirable articles, taken from stock not manufactured for show, by Messrs. Gill & Green, of Oxford. It would be impossible within our limited space even to indicate the range of this particular exhibition.

* See p. 606.

† Vol. xxi., pp. 145, 152, 153.

Garden chairs, it included, of various patterns, and all of excellent make. One sociable for three persons is admirably contrived; the sitters have ample room, and have their legs well out of each other's way, yet face a common centre. It has a table attached, and is of light metal, with cane-pattern seats and top. They also show *tête-à-tête* and other garden seats, croquet and steel-spring chairs. Their shrubbery gates and fences of very neat rustic patterns, in iron, are also very meritorious, as are their rosaries and other flower-garden accessories.

Messrs. Weeks & Co., of Chelsea, exhibited an extensive display of models, designs, and full-size examples, of glass houses for winter gardens, conservatories, pineries, vineries, peach-houses, and forcing-pits. Many of the designs are highly ornate and effective; others are for useful, plain, yet well-proportioned, and substantial structures. The mode of heating by an upright tubular boiler has proved highly effective, as is evident from the extent to which it has been adopted. The firm have acquired a high reputation as warming and ventilating engineers, as well as horticultural builders. Mr. Cranston, of Barkfield, Birmingham, also exhibited specimens of his construction, including his "Gardener's greenhouse," with forcing-pits at the sides; the combination of the pits with the greenhouse being so contrived as to increase available space, and proportionately much diminish the cost. They are glazed without putty, all the parts being screwed together so as to make them portable, and easily taken down and re-erected. Mr. T. G. Messenger, of Loughborough, showed a well-ventilated, curvilinear conservatory, and a vinery. He claims for the mode of structure that it combines strength with lightness and durability. The rafters are supported by iron uprights, braced by tension rods.

The patented principles in Mr. Messenger's system of construction are in the mode of ventilation, the form of the muntins, the use of tension rods, and saddles at the ridge. The houses have also neat wrought-iron crests at the ridge, and end finials; but this feature is not peculiar. The same patentee has also some valuable inventions in ordinary and in flanged valves for hot or cold water, gas, or steam; and in a triangular tubular boiler; also in pumps and garden engines. In the same department, Messrs. Dennis & Co., of Chelmsford, exhibited their lean-to and other galvanised metal structures for the growth and protection of fruit and flowers. These structures, which were awarded a first-class certificate of merit at Manchester last year, have, as main features, their bars and bindings of T and angle iron. Their heating and ventilating apparatus and arrangements are also effective. Among new exhibitors is Mr. P. J. Perry, of Banbury, who exhibited an improved peach-house and other examples of his peculiar mode of construction. He glazes on lead bars, with bearings of wood, and supplies his curvilinear peach-houses at about 2l. 2s. per lineal foot. Mr. Ayres, of Nottingham, showed a hot-house, consisting of a framework of rafters and mullions which may be placed from 6 ft. to 8 ft. apart, and are connected by T iron purlins, at such distances apart from the ridge downwards, as may be necessary to receive and support by the ends sheets of glass from 20 in. to 40 in. in length, and in any convenient width. Putty, sashes, and sash-bars are dispensed with, as paint may be also, if galvanised iron be used. Glass and slate walls, and glass-covered walls, for horticultural purposes and fruit growing, were shown by Messrs. Dennis; Messrs. Sanders, Brewer, & Co., late C. Beard, of Bury St. Edmunds, who showed also some neat and economical wall tree-glass screens, and by the St. Pancras Iron Company; the last the invention of Mr. J. R. Scott, which has been already noticed in the *Builder*. The glazing under Beard's patent is peculiar. The glass is laid on iron rafter-bars, on which strips of elastic material are placed; similar strips are placed over the glass, and above these a covering-bar. Studs are screwed into the rafter-bars, and are passed through the covering-bars, being threaded at the top. The covering-bar and the glass are fixed by hard white metal nuts, screwed down on the top. The glass used is 26-oz. Belgian sheet, and of uniform size, 30 in. by 20 in. Broken squares can be replaced with the greatest facility by an ordinary gardener. The houses are supplied in uniform bays or lengths of 5 ft. The ventilation is by the ridge, and on the perpendicular portions at the sides. Mr. B. Wheeler, of Nottingham, showed

a good example of his greenhouses, which are slightly in appearance and moderate in price,—25 ft. by 15 ft. 6 in., 50l. in brickwork, or, if portable, 66l. Messrs. Wright & Co., of Birmingham, showed some very good garden-pumps and engines, syringes, shower watering apparatus, and a very ingenious portable self-acting fountain. A hydronette, shown by Haynes & Sons, of Edgware-road, supplied from a bucket placed on the ground, was performing capillary in watering the lawn, the shower being sent to an astonishing distance. Pressure is obtained by the creation of a vacuum in the tube. For heating purposes a meritorious novelty was exhibited by Mr. B. Harlow, of Macclesfield, in a safety back or range boiler, in which bursting power is reduced to a minimum. The tubes are so arranged in section that each part is free to expand and contract without injurious result or danger from variable expansion. Mr. H. Ormson, of Chelsea, also exhibited ventilating and hot-water apparatus of an effective character.

A varied and meritorious display of brick, pipe, and tile work, was made by Messrs. Colthurst, Symons, & Co., of Bridgwater; the ornamental ridge tiles, Roman tiles, garden borders, and others of an ornamental character were shown with great profusion of colour and pattern, red, dun, and glazed black or in colour. Their exhibits also embraced drain and water pipes, with socket joints of various dimensions. Mr. Parham, of Bath, had an excellent display of strained wire fences, unclimbable hurdles and fences, malleable iron entrance-gates and foot-passage ways through iron fences secure against sheep and cattle, with espaliers, and ornamental tree guards, gates, and railings.

Mr. W. Edgecombe Rendle had a full display of his economical and ingenious fruit-tree, bine, and plant protectors, consisting of brickwork and glass simply, without the use of iron or wood, mortar or putty. Mr. Rendle's exhibits excited great interest among those not previously acquainted with them. By the way, we may mention that on the last day of the Royal Horticultural Society's Show, the thermometer at the Radcliffe Observatory was registering above 90° in the shade. Notwithstanding the numerous attractions of the show itself, and the supplementary attractions of the sweet music discoursed by the band of the Oxfordshire militia, and by a selection of about thirty of the best men of the Royal Artillery band from Woolwich, the attendance was very limited.

The show of the Agricultural was situated at a considerable distance further out of town than the Horticultural Show. It was truly a bewilderingly vast affair. Opposite the entrance were a number of "shows" of another kind—menageries, waxwork, fat boys, &c., with the smaller accompaniments which were not to be seen last year at Manchester, and that furnished a good representation, or revival, of an institution that might have been supposed defunct—the country fair.

The impossibility of dealing adequately, or even at all, with this great exhibition, and the vastness of the proportions whereunto it has attained, will be readily apparent from a few comparative figures. At the first show of this Society at Oxford, thirty years ago, three acres of ground sufficed for the show-yard; this year, seventy acres have not been found too much: then 22 firms exhibited; this year there were 386; then there were 72 exhibits; this year there were 7,851. Vast though the scale of the exhibition was at Manchester last year, there were this year eleven more stands than were occupied then. The entries for live stock were, however, much smaller in number than at Manchester.

Of the show and its attractions, as of the city of Oxford, we may say with Wordsworth,—

"Ye spires of Oxford! domes and towers
Gardens and groves! your presence overpowers
The soberness of reason."

Roman Pavement.—Workmen employed by Mr. Arkell, builder, in digging out the foundation for a house in the Commercial-road, Gloucester, came, at a depth of about 5 ft., upon a large portion of a beautiful tessellated pavement, with a bordering of unusually large grey and blue tesserae of rather a coarse kind. Next to this was a beautiful design in blue, white, and red tesserae, of quatrefoil character, surrounded with a guilloche border; and a few feet from this, another piece of tesserae of geometrical design. As usual, intruders removed some portion of the material; the remainder has been secured. The colours were exceedingly fresh and vivid.

DRAWING FOR CARPENTERS AND JOINERS.*

THE drawing for carpenters and joiners to which we are about to allude is contained in the new volume issued by Messrs. Cassell, Petter, & Galpin in continuation of the series, noticed by us on a former occasion, offered for the technical instruction of operatives. Three kinds of drawings are applied to the delineation of objects likely to be useful to carpenters and joiners; and then special erections are fully detailed by means of either or all of them, as the case may be. The three kinds of drawing are described as linear drawing by means of instruments, free-hand drawing, and drawing from solid objects, or perspective; and the most important objects selected for illustration of the application of these processes are coffer-dams, wooden bridges, roofs, mouldings, staircases, parquet work, gates, shutters, and doors. It will be remembered that the first volume of the series taught the elementary principles of practical geometry; the second, orthographic and isometrical projection; and the third, building construction. Throughout all these the student was gradually informed of the knowledge he must acquire to be scientifically versed in his trade; and now, in this volume, the particular branch in building construction pursued by carpenters and joiners is selected from others for fresh and full systematic explanation and illustration. Mr. Ellis A. Davidson speaks of drawing as the language of the workshop, and says it is more eloquent than words, more rapidly understood, and less liable to be misapprehended: he adds, truthfully, that these advantages are not found in it without intelligent rendering, a thorough knowledge of construction, and correctness in delineation.

The little work is handy and compact, and full of folded sheets of wood engravings, representing working drawings. When we say that some of the designs are scarcely up to the mark, we point out the only shortcoming in the general scheme of it. Some of the erections illustrated, notably wooden bridges, and some of the portions of buildings, such as roofs, are prefaced with short accounts of their gradual development, which cannot fail to interest those who are engaged upon the formation of specimens of the same objects. The first bridge ever built across the Tiber, Mr. Davidson tells the young carpenter, was put together without either bolts or ties, so that it could be readily taken to pieces. That over the Danube, by Trajan, was supported on twenty stone piers, which were 150 ft. high and 6 ft. broad; and formed of timber arches, of 170 ft. span, consisting of three concentric timber rings, bound together by radiating pendants, on which were placed the longitudinal beams for the flooring joists. And that over the Rhine, built by Ulrich Grubenmann, with two great openings, one of which was 170 ft. span, and the other 190 ft., formed of longitudinal beams, bolted together, and supported by numerous struts, kept in their places by vertical binding pieces, and roofed in, was, in fact, an early timber tubular bridge. A Swiss covered wooden-truss bridge of this kind is the subject of one of the drawings. The De Lorme system is illustrated in a bridge over the Weser; and that of Colonel Erny is also fully described and delineated. Here is a wooden railway-bridge from the neighbourhood of Paris:—

"This bridge is supported upon, instead of being suspended from, the four arch trusses. These bows are formed of fifteen laminæ, or layers; but not only is the break-joint system carried out in the length, but in the breadth, as will be seen in the transverse section of the bows. The planks of the bows are tarred, excepting on the outermost edge; and further, coarse paper saturated with tar was laid between them before binding to the template. When the required curve was attained, the planks were united by strong oak pins, plates of lead being previously inserted to prevent the wood suffering from the stress. The planks are further secured by iron bands. . . . The ends of the bows abut in cast-iron shoes, firmly fixed in the springings of the piers."

In this way are the student's sympathies with his work enlarged. As examples of roofs, Mr. Davidson has chosen that of the chapel of the Royal Hospital, at Greenwich; that of St. Paul's, Covent Garden, London; and that of Drury-lane Theatre. These three are illustrated on one sheet; and their construction is explained in the letter-press, with directions how to draw it.

* "Cassell's Technical Manuals." Drawing for Carpenters and Joiners. With 260 illustrations and drawing copies. By Ellis A. Davidson. Cassell, Petter, & Galpin; London and New York.

The roof of a German agricultural building is thus described:—

"In this example, the walls are doubly tied together: first, by means of the tie-beam, which rests on corbels fixed on the lower portion of the wall, which is thicker than the upper. The principal weight of the roof is carried down to this by means of the cross-pieces, and to these the ties are attached, whilst the cross-pieces act as hammer-beams, being attached at their one end to the struts, and at the other to the end of the principals. The principals cannot thus spread outward, and as the hammer-beams rest on the wall-plate, on the upper edge of the wall, a second tie is secured. The principals are further confined at the top by a collar-beam, suspended from the king-post. The tie-beam is supported on bridging-joists, which run parallel to the length of the building, and are supported on posts, the bearing of which is increased by the cross-pieces."

And this is made clearer still by frequent references to the illustrations. Germany has been laid under contribution in several other instances, owing to the facilities the author has enjoyed from the co-operation of the heads of various Continental technical schools. In Germany, the author tells his students with a view of creating a sense of pride and pleasure in their pursuit, the house-carpenter is called "Bau-tischler" (the building, cabinet, or table maker), and "Fein-zimmermann" (the fine-room man). In a word, the carpenters and joiners who take the trouble to supplement their experience at the bench with the technical instruction in drawing here offered to them, will be glad they have done so, and find themselves much better men.

CONDITION OF DUBLIN.

RETURNING to our recent observations under this head,* let us look at what has been done in another direction. During the last twenty years Dublin has undergone many changes, some improvements; but in architectural design of the highest order she has made no progress. In ecclesiastical architecture she has done much, and in domestic evidences of improvement are visible.

House property, in many of the old and once-respected quarters of the city, has frightfully deteriorated. Some of the streets that seemed for some years on the decline, have gradually emerged from their seedy condition. In these cases the result was owing to the opening of respectable shops, and the erection of extensive and handsome warehouses. In Henry-street quarter the rental has greatly increased; while in Summerhill, once a fashionable quarter, the rental has greatly fallen. What is the making of one district ruins another,—at least, for a considerable time. During the transition of a street from private houses to shops, some interests must suffer, for one grade of occupants are sure to migrate at the approach of another.

In the principal leading thoroughfares of Dublin, north and south of the Liffey, some architectural improvements are visible of late years; for example, Dame-street, Westmoreland-street, and College Green, on the south, and Sackville-street and the streets at right angles to it, on the north side. The most marked evidences are the erection of public offices, branch banks, and English and Scottish Life and Fire Insurance agencies. In these lines several large structures have been erected, and at the present hour others are in course of construction or completion. The style of some of these structures is an imitation or adaptation of the Glasgow and Edinburgh one. There appears to be a fancy for seizing on the corners of streets wherever they can be obtained, so that the architect can have room to indulge in elaborating the angle turrets so common in Scotland. With the architectural appearance of those structures lately erected in Dublin there is little fault to be found, at least, externally considered; but it is to be hoped that the Edinburgh and Glasgow system of "flats" will not be introduced, nor their spiral corkscrew staircases. Dublin tenements are bad enough of late years in some sanitary respects, but we trust the Scottish cancer will not be engrafted on the Irish evil, and that "the second city" in her Majesty's dominions will be saved from perpetuating a disaster which is not agreeable to contemplate.

Within the city of Dublin in the present year building operations are not at all brisk, and the once noble and still spacious squares of Dublin present a dull and decayed appearance. Many of the fine mansions in the squares on the north and south sides of the Liffey are empty; and where noblemen and peers, and merchant princes, formerly resided, fifth-rate barristers and rising shopkeepers reside.

In Cavendish-row, Temple-street, Great Denmark-street, and Henrietta-street, on the north, and in Molesworth-street, Kildare-street, Leinster-street, and adjacent streets and squares, the rental has fallen considerably, and the class of occupiers is not near so influential or respectable as formerly.

The southern suburbs have monopolised of late years a great portion of the respectable citizens of Dublin, and the middle classes. Residence is preferred there, and the city is but the place of business, and the dwelling of those who cannot help it.

The northern suburbs of Drumcondra, Phibsborough, and Clontarf, have made very little advance, and it is to be marvelled at.

The existence of turnpikes on the roads of the northern suburbs for many years after their abolition on the south was, no doubt, an impediment, and an eyesore to visitors.

On the score of health, the Clontarf neighbourhood can compete with the marine district of Kingstown or Bray, and the expenditure of a little capital in a few years would transform Clontarf, Dollymount, and Sutton into beautiful watering-places.

The lords of the manor in those districts are neither energetic nor speculative, and they stand in their own light, and suffer accordingly. These lands, which might be let profitably, are lying waste. They ask ridiculously high prices for building purposes. An impetus can be given to building operations on the north side of Dublin only by letting the land at a lower rent and on long leases. Time would arrive hereafter when big prices might be obtained. When the tide of fashion set in, Clontarf and its neighbourhood would prosper; but fashion, like other human caprices, must be offered inducements to settle down. Will our Dublin friends take a hint from the open volume of nature, and react with their human nature's best energies upon her? If they do, another generation will prove the utility of our teachings.

If confirmation were needed to bear out the justness of our remarks in our previous article concerning the present condition of Dublin, ample is afforded. There is no lack of illustrations to show why the capital of Ireland is sunk in a rut from which it seems unable to extricate itself. Wherefore? It is traceable to corporate supineness and want of ordinary public spirit. We have instanced Belfast as an example for Dublin to follow, if she plead her inability to cope with it. The northern capital of Ireland, when she failed in getting Government aid, or advances, set about developing her local resources by the embodied public spirit of her citizens. She did not keep up a continuous whine to the refrain—

"We've got no work to do."

She found she had got plenty of work to do, and by exerting her latent energies she soon found a method to accomplish it. Sooner than beg, Belfast pledged the credit of her local revenues and harbour dues, and raised capital by a lien or mortgage on the income accruing from her port and shipping and other interests, with what grand results we now behold. The navigation of the Liffey is wonderfully improved, hundreds of acres of land are reclaimed, new bridges and new docks are constructed, the revenues of the port are five-fold increased, because a greater number of ships trade with the port, from the improved facilities afforded to the import and export trade. Thus has Belfast improved, and as a port cannot improve without the city which belongs to it progressing at the same time, the city of Belfast has accordingly advanced in commercial and manufacturing prosperity.

Let us point out another simple illustration *appropos* to the present hour,—a matter small in its way, yet fraught with the most beneficial results. Belfast, through some of her citizens, considered it would be to her advantage to be represented at the Workmen's International Exhibition in London. In this she considered well, and at the moment we write she stands alone among Irish cities as an exhibitor both in her citizen character of employers and skilled workmen.

Dublin, the Irish capital, makes no show. No employer represents his workmen, nor workman employer represents himself. It may be said that it is a workmen's exhibition, and there was no need. All exhibitions, more or less, of its kind, are workmen's exhibitions. The products that are shown in all exhibitions are the offspring of skilled labour properly directed; and it ought to be the desire in this case of large manufacturers and em-

ployers of labour to see their workmen in the field. What redounds to the credit of one must reflect honour on the other. But no Dublin artist or artisan, either in his capacity of employer or workman, has entered the lists at the Agricultural Hall. Of all Ireland, Belfast alone is to be noticed. What about the Dublin corporation? Are there not some of her aldermen and town councillors large employers of labour? Whither, let us ask, is the national pride that once existed in Dublin fled? Where are all those grand fabrics of woof and warp, once so famous on the forlorn "Liberties" and desolate Coombe? Are the celebrated Irish tabinets and poplins,—the admiration of Royalty,—no longer woven? Are the Frys, the Pims, and the Atkinsons dead? Have all the looms of South Dublin been broken up for firewood, and the weary-worn workers walked down into "the valley of the shadow of death"? Have Dublin's celebrated cabinet-makers turned into auctioneers or furniture-brokers, and levanted into the regions of Bride's-alley? Are the Messrs. Beakeys and McDowell's, the Strahans, the Joneses, the Williamses, the Scotts and Kerrs, descended into the grave of the Capulets? Do the monster houses of Henry-street, Mary-street, and Sackville-street, monopolise all? and have they placed an interdict on Irish exhibitions outside Dublin? Is there an interdict against the men? or how is it, or why is it?

In bell founding—that boasted trade of Dublin—not one exhibitor or workman shows a bell, or its metal.

We remember, in the Exhibition of 1851, and later ones, the Murphys, the Sheridans, and the Hodges. Irish and Anglo-Irish firms vindicated their claims, and upheld their own and their workmen's repute: have the principals of these firms sickened and died since then, or have they lost faith, or do they scorn contact with "Sassenach" workmen?

What of the superb old coachmakers of Dublin? Not extinct, we hope. Surely the Messrs. Hutton and Longs, the Fowlers, the Nugents, the Floods, and others whose names we forget, but whose workmanship we admired,—surely, we repeat, they have not, like the great Colliers of the last century, "died out"? Not one characteristic "low-backed car," from one erratic workman of these firms even, has found its way to Islington.

We thought at least, too, that the gun trade in Dublin was rife, and that the Messrs. Rigbys, and Trulocks, and Kavanaghs, and Parkinsons, were alive in the land, and that Italian, Neapolitan, and other alien gunsmiths would meet competitors in the persons of their workmen. Alas! neither in boots nor shoes, hats nor coats, statuary nor stationery, nor those very small articles, pins, of which Dublin boasts a manufactory, is the Irish capital represented in the Workmen's International Exhibition.

Belfast has its machinery and sowed muslins, its linens and its tweeds, its snow-white fabrics and its snow-white starch, and though she exhibits on a limited scale, she has exemplified her characteristic enterprise by her action.

Passing from this matter, which might be dilated upon with profit, we will but allude to instances where private generosity has stepped in to do for the trade and ornamental improvement of Dublin, what the collective corporate capacity of her municipal councils could not and would not attempt. Every one remembers what the late Sir Benjamin Lee Guinness, by a princely donation of upwards of 150,000*l.*, did at St. Patrick's Cathedral, affording employment for four or five years to hundreds of skilled workmen, many of whom would otherwise have been idle or receiving parish relief, and thereby increasing the taxation of the city. Again, it is only a few days since the son of the former has bought up the Dublin Exhibition building and ground, known as the Winter Garden. This affair has been purchased at the cost, we believe, of 45,000*l.* The whole collective public spirit, of 45,000*l.* The whole collective public spirit, of corporate and otherwise, of Dublin, was unable to do anything to save it from utter bankruptcy and ruin. Where there exists such an absence of public spirit in a city as we have shown exists in Dublin, it need not be wondered at that, commercially and sanitarily, she is in a backward state.

The House of Commons is now to be resorted to, to empower the corporation to possess themselves of certain lands, or the freedom of doing as they like with certain land, in carrying out the future sanitary improvement of the city. It will afford the corporate authorities of Dublin a capital excuse; for no matter what

* See p. 579, ante.

delay may be occasioned, the blame will be thrown on the back of the Government or the law. A river embanked like the Liffey for years could with little trouble have been kept tolerably pure; and for the last fifty years any amount of waste land could be had within a stone's throw of the mouth of the river at a mere nominal price. There any amount of sewage and dredging might be shot or utilised for more profitable inland purposes. Two canals have their mouths in the harbour of Dublin, north and south; so facilities exist and existed, independent of the railways, to spread the science of irrigation into the heart of the country, and make the Liffey the chief feeder. Dublin could not do, it seems, without her smelling salts; so the corporation preserved the sewage in the bed of this beautiful river, quarrelled with the Ballast Board for doing *nothing*, and showed to the public at large their own admirable capacity for doing the same.

ANOTHER LONDON CLUB.

AT the beginning of this month, as of old time in July, the Noviomagians took their day out, making Tunbridge Wells, Penshurst, and Hever Castle the ground of action. Some two-and-forty years have passed since Thomas Crofton Croker and A. J. Kemp, both good antiquaries and merry men, founded, on the occasion of the discovery of certain remains of the Roman city of Noviomagus, near Bromley, in Kent, the little "Society of Noviomagians," semi-serious, semi-social. Like the "Cocked Hats," that came after, and of whose latest outing we spoke the other day, Noviomagus is an offshoot of the Society of Antiquaries. The only rule it has, indeed, that may not be broken is, that no one is eligible as a member but a fellow of the Society of Antiquaries; and the second toast uniformly drunk at its little dinners—and little dinners are, after all, its *raison d'être*—is, "Our parent Society, the Society of Antiquaries." With unwavering persistency, though, of course, with chequered brilliance, its dozen members—alas, how often changed!—have held each year since then their half-dozen town meetings between November and April, and their one antiquarian ramble in the country on the 1st of July, precursor, in this way, alike of "Archæological Association," "Archæological Institute," and the host of County societies that now make an annual excursion. In a quiet way, hints were given and old buildings saved at a time when there were fewer who recognised their value than there are now. Love of good wholesome fun has been always professed in Noviomagus: with a well-known Latin poet they hold that "it is pleasant to play the fool in the proper place," and say, with the French satirist, "*Qui vit sans folie, n'est pas si sage qu'il croit.*" Perhaps this was never shown more forcibly than when, at the time that a little ill-feeling ruffled the antiquarian world, the Noviomagians invited the officers of the Society of Antiquaries and of some cognate societies to dinner, and gravely received them attired in ancient and foreign dresses. Those who knew Sir Henry Ellis, Mr. Amyot, and Mr. Pettigrew, then amongst the visitors, will judge of their surprise; gravity was out of the question, and all went merrily. On that evening the president, Crofton Croker, distributed copies of Garrick's first draft, from the original in Garrick's handwriting, of what afterwards came to be "The Clandestine Marriage." It showed the curious growth of a play. This sketch, which Garrick called "The Sisters," and sent to George Colman, was suggested to him by a French comedy of the same name (where the French writer got his idea from is not mentioned), and Colman, though he says he threw "The Sisters" into the fire, wrote his popular comedy on that as a foundation. We must not be tempted, however, to remembrances of this sort, or the story will be too long. The meetings of the Club at that time, and for years after, were held at Wood's Tavern, in Portugal-street, Lincoln's-inn-fields, because Joe Miller's tombstone was against the wall of the house. Changes took place in the neighbourhood, and since then the *locus in quo* has been less permanently fixed. Amongst the older members whose names occur to us were Sir William Betham (Ulster); William Jerdan; the Comptroller Saunders, who saved the Lady Chapel at Southwark; G. E. Corner, well known in that borough and beyond; the late Lord Londesborough (when Lord Albert Conyngham); John Barrow, of the Admiralty; John Britton; John Bruce; F. W. Fairholt;

Mr. Planché; and other known men. In the early days Theodore Hook (then a neighbour of Croker's in Fulham) and the regretted Maclise were not unfrequent visitors. On a special occasion Arctic explorers were the guests of the night; on another came Dickens; and it was at one of these unpretentious dinners that Thackeray, soon after he had first really hit the public with "Vanity Fair," warmed into confidence, and sketched his intention of writing a set of lectures, taking them to America, and with the money he looked to make, some 7,000l. or 8,000l., he said, as a nest-egg, founding a little fortune; all which, as he afterwards told this present scribe, did really follow with curious agreement.

Odd contrasts have been seen in Noviomagus. A notable instance occurs to us. It was at a dinner during the mayoralty of one who has long been a member of the Club, Sir Francis Moon, when, to increase the joke, he came attended by three gold-laced servants, stately and stalwart,—so stalwart, that the little overflowing room scarcely afforded space for them and their amazement. Amongst the visitors, that night being special, were the then Lord Chief Baron, always as ready for innocent fun as for profoundest mathematics, an eminent poet, and the United States minister, Mr. Buchanan, who soon after left this country and assumed the presidency, which led to such bloody results. Mr. S. C. Hall played president in his happiest manner, and the evening was certainly remarkable. A genial message to the Club from the "White House," during troublous times afterwards, showed that it had not been forgotten by the President of the United States.

The Minutes of Noviomagus have always been kept, with more or less fulness and fun; John Richards, of Reading, John Bruce, Mr. Godwin, F. W. Fairholt, amongst others, having each held for some years the office of secretary: Mr. Frasn. Bennoch now carries on the torch, and it burns no dimmer than of yore; Mr. S. C. Hall still sits in the presidential chair; while around him muster, with a few already named, Mr. Charles Hill, Mr. Durham, A. R. A., Mr. Joshua Butterworth, Dr. Diamond, Mr. Henry Stevens, Mr. Lawrence, Mr. Chaffers, Sir Francis Mogen, Captain Charles Ratcliff, and others, making up the regulation dozen irrespective of visitors.

But now, as to the outing that led us to this little reminiscence, on which we have dwelt so long that we can give but small space to what suggested it.

After a ramble on the "tiles" of Tunbridge Wells, and much wonderment at the growth of the place on the part of some that knew it long ago, the members and their visitors, including an eminent citizen of the United States (who has recently devoted a million dollars to the foundation of a public library in his native state), Mr. James Dafforne, and a sprinkling of lady archaeologists, proceeded to Penshurst Place, which, thanks to Lord de Lisle, they were able to see thoroughly. Unfortunately, however, the rooms are "in curl-papers." Works are going on, including decorations by Messrs. Crace; and the pictures are scattered about here and there in "most admired disorder," taking the word "admiration" with its Shakspearian meaning, wonder. We therefore cannot say with Ben Jonson, when describing a visit by James I. to Penshurst, that there was not a room but was

"Dress'd
As if it had expected such a guest."

There are some good pictures here, and some that are not so, but all are interesting: the whole place talks history, and we remember that

"Sidney here was born:
Sidney, than whom no greater, braver man
His own delightful genius ever feign'd;"

and Waller has given it other associations.

The great hall, a fine apartment built in the fourteenth century, is, reasonably enough, the most attractive part of the place. Right to fortify the house (*kernellare*, to crenellate) was first given in the year 1321, when Sir John de Polteney held it. Later it came to the Crown, and King Edward VI. gave it to the Sidneys. A vaulted apartment at one end of the hall is of somewhat earlier date: its age has been called twelfth-century, but we see no reason to date it earlier than the thirteenth. The open roof of the hall, the dais and high table, the side-tables, the hearth and dogs in the centre, with, at present, no *louvre* in the roof above, to let out the smoke, though it doubtless did exist, are all objects to note. Some of the visitors compared the hall with that at Eltham, and com-

menting on there being no bay window at the end of the dais, had to be reminded that Eltham was more modern than this (a hundred years or so), and that the bay window in that position was not used till the fifteenth century. As originally fitted up and decorated, the hall must have been a sight:—

"Clothes of gold and arras were hang'd in the hall,
Depaynted with pictures and histories many folde,
Well wroughte and craftely with precious stones, all
Glytteryng as Phebus, and the beten golde."

Enormous sums were charged for hangings at that time; documents remain showing the prices paid. They were hung on pegs to a height of 8 ft. or 9 ft. round the walls, which above were painted.

Penshurst Church was well restored some few years ago, and has a pleasant aspect. Two thirteenth-century sculptured grave-stones have been built into the inner wall of the tower. There is a small brass, amongst others, to "Thos. Bullayen, son of Sir T. Bullayen;" but of these Boleyns more, of course, was heard when the party reached Hever Castle.

Hever has one of the finest gate-houses in the country, with bold machicolations over the gate, panelling in the front, and grooves for three portcullises, two of them holding portcullises, though these, perhaps, are not original. There is a well-filled moat, too, round the house, so that on the approach the effect is charming. Within there is less worth seeing than might be expected: still there is much, and all who are interested in the story of Anne Boleyn, who, poor woman, has managed to keep enemies active up to the present moment, will visit it with pleasure, and look at the window whence she used to watch the approach of the selfish king. Here, too, died Anne of Cleves, to whom Henry had given the castle. It has its name from Sir William Hevre, of Hevre, near Northfleet, who built the castle that preceded the present structure. One of the guide-books says,—"Another room will be shown the stranger—Anne Boleyn's bed-room." Do not expect it, at least just now. The place is in somewhat churlish hands, and if Mr. Froude himself sent in his name, and said he could not finish his next article for *Fraser* without looking into Anne's room for a fresh bit of evidence against her, he would be refused. However, there are several parts that can be seen,—the so-called council-room in the gate-house, the long gallery in the roof, and the exterior of the back part of the castle,—so the visitors were content; but on the road back they contrasted the curt refusal of the year-tenant at Hever, with the many gracious receptions they had experienced in their time from owners of historic houses, and admitted the existence of the feeling that *noblesse oblige*. When back in Tunbridge Wells, an excellent and merry dinner at the Sussex Hotel brought all things straight. Part of a poem by the secretary, prompted by last year's outing to St. Alban's, and titled "A Legend of the Abbey Church," was read with approval, and the general belief went in favour of the correctness of the inscription on the original seal of the Society, to wit,—

Noviomagum non potuit abolere vetustas.

In other words, there is still a future for the little Society of Noviomagians.

INDIAN PUBLIC WORKS.

ON this subject, some little time ago, Sir Bartle Frere addressed the East India Association at very considerable length, and his paper was discussed at subsequent meetings. The following extract from his paper will interest some of our readers. The subject is one by no means foreign to our pages, and will be treated of again before long:—

I will very briefly state to you what is the rule which I think should be laid down for the future, and the rule is one which is not new nor of my own devising. You will find it very eloquently stated by Mr. Samner Maine, in some very useful discussions which took place on this subject in the Legislative Council of Calcutta some years ago; and it is simply this, that the Government should have a share and a voice in the construction and management of all works which are of such magnitude as to affect public interests or private rights, by establishing a virtual monopoly. Where no public interests are involved, nor private rights affected, in the way of monopoly, there let the enterprise, however vast, be left to unrestricted and unfettered

private enterprise. The rule would be very like that which you lay down in this country where you involve the intervention of the State in the shape of an Act of Parliament, whenever public interests are involved, or private rights of adverse parties affected, or where it is sought to create anything in the shape of a legalised monopoly. In all other cases you leave owners and capitalists unrestricted.

The rule is best illustrated by instances. No great railway, or trunk road, or canal, or scheme of drainage can be carried out without affecting the interests of others than the projectors,—of the public, in fact,—or without creating a virtual monopoly. In all such cases it would be imperatively necessary to invoke the intervention of Government. Harbour works, gas-works, water-works, and the like, may be mere improvements of private property, or may be intended to produce water or gas for sale, like any other commodity. In that case Government intervention would not be required; but if it were sought to create anything like a virtual monopoly, or to affect the rights of other parties, then Government intervention would be necessary. This brings us to the question how the capital is to be provided? If the public is willing to provide the capital on receiving a guarantee for a certain amount of interest from the Government, I, for one, think it an exceedingly good system, and capable of being easily guarded against abuse, and freed from the objections which have been of late years urged against guarantees. But such a system is not very easy of application where there are no direct pecuniary returns; and for this and other reasons we will postpone its consideration for the present, and consider how capital is to be provided for works to be executed and managed on the exclusive responsibility of Government? such, for instance, as great military works, canals, roads, harbours, and the like. This is, in fact, the question which lies at the root of all our financial difficulties in India,—how is the public works capital for India to be provided? Of course you can continue the present/absence of all system; but I doubt whether that would find many advocates. You may propose to do the whole work from the surplus revenue of India. That plan, of course, has more advocates than the other, but I doubt if any man in his senses, who really knows the extent of this work, would dream of doing all that India now requires out of the surplus revenues of India; and in the belief that that is an untenable proposition, I will say no more on the subject; then, if you adopt neither of those two courses you come to borrowing in some shape or other. If you neither let things go on in their present haphazard way, nor leave them entirely alone, nor attempt to do them out of your surplus annual income, then in one shape or other you must resort to borrowing; and the question arises, how would you borrow?

Now, I cannot help thinking that a similar question has been fully considered, and it has been to my mind very satisfactorily solved in this country. If I go to any of our great cities, where the commercial element has had perhaps its best development, what do I find? I find very magnificent harbour works, halls of justice, jails, spacious commodious markets, and other works of the like character; and when I inquire how they have been erected, I am told that they are public works, and that the body which represents the local government of that place, very generally has provided them by borrowing under Acts of Parliament, and under conditions which oblige the taxpayers and ratepayers of that part of the country to pay a particular sum in excess of the ordinary interest on the capital raised, by which the loan is extinguished in a few years. The system seems to be thoroughly well understood, and very extensively acted upon, and, as far as I can see, there is no sort of practical objection found to attach to it, either financially or in any other respect. The work appears to be well done, and it is economically and promptly done, and done in every respect, I should say, in the way in which those who are interested in public works in India could desire their works to be done. Again, if I inquire how a large landed proprietor in England, or in Ireland, improves his estate, what do I find? Many men have an estate of 10,000 acres and more which requires a very large outlay in draining and other works of the kind, perhaps an outlay almost equal to the fee-simple of half the estate; but what does the owner do? Very often he borrows the money from some private money-lender; but you have a device which has been acted on both in England and in Ireland with the greatest success, as far

as I know, without any disadvantage arising in its administration, by which landowners situated as I have described may improve their estates by the application of public funds advanced by the nation. The system is this: Parliament from time to time places in the hands of commissioners or trustees a certain sum which is lent out by those trustees to country gentlemen, who lay out upon their estates such sums as they require, and repay the loans back to the nation within a certain time—generally within the range of an ordinary lifetime. Thus you have two modes of raising funds; one of them very much followed by landed proprietors in England and in Ireland for the improvement of their own estates, and the other followed by some of the greatest commercial centres of England, and in both cases the work is done with public money, or rather with money raised on public credit, under the sanction of Parliament; and this is all done under conditions which enable the minister of the day at once to lay his finger upon the person who is responsible for any malversation. I would ask gentlemen who are here present whether it would be possible to misapply a large sum which had been raised to be expended upon a gaol, or upon a court-house or a market-place, in Manchester, or Bolton, or Liverpool, or whether it would be possible to misapply money which had been advanced for the drainage of a private estate under the systems I have alluded to, without its being certain that the evil-doer would be at once found out and brought to justice? That is a state of things of which you have no parallel in India, but is precisely the state of things at which you would wish to arrive there.

Now the system which I would ask you to consider is not proposed now for the first time, for it was proposed by me, many years ago, to be followed in India; and I now propose it for consideration, not as a new system, but as one which has been known and acted on, and acted on beneficially among you in this country. It is simply this: that Parliament should pass an Act appointing a commission or trustees who should have power to raise and apply a large sum of several millions sterling; this sum to be raised by loan in England, the interest to be paid by the Secretary of State for India in Council from the revenues of India, and the money to be applied to public works in India. This would be done by empowering the commissioners to allot sums for specific works on the application of the local governments in India, and on their engagement to repay to the trustees such loans, with interest by annual instalments. That is the system to which I have alluded as in force in this country, simply putting the local governments of India for the corporation—it may be of Bolton or Manchester—or for the owner of an estate in England.

You may ask, in the first place, "Why have a Commission? Why would not the present Government of India or the Secretary of State in the Council of India do?" the Council of India being, as you know, intrusted with the control, to a certain extent, of the finances of India. I will simply mention one or two reasons, out of many, why neither of these existing authorities should be intrusted with the power of advancing money from those loans to be raised for public works. The main reason is this. You want for such a purpose to establish your personal direct responsibility. Hence, what you want is a very small number of trustees, and not a large body that should be able to divide the responsibility. You may, doubtless, find the men you require among the members of the Council of India; but they should be specially selected, and it should not be made a part of their ordinary duty. I do not know how many are usually intrusted with the disposal of sums raised by loans for carrying out similar works in England; but, if I am rightly informed, the men who are made personally responsible are never more than two or three; and therefore I consider that a commission, not exceeding a very small number of men, should be appointed by Parliament. But why should it be appointed directly by Parliament, and not by the Government of India and Secretary of State in Council? For this reason, in order that it should be more immediately responsible to Parliament than the Council of India or any other body connected with ordinary administration can possibly be. You may have most admirable, well-selected men in the Government of India and in the Council of India, and yet they may not be precisely the men whom you would choose as trustees. When you are looking out for a banker

or a trustee, you do not look out for the ablest engineer, the most acute man of science, the greatest politician, the most able or the most eloquent statesman, or the bravest of soldiers; you look out for a man possessing those very peculiar, simple, but very necessary qualities which you compendiously describe as constituting "a good man of business," "a man fit to be a trustee." That is the sort of man you look out for, whether for a private trust or a public trust; but your governor-general may be a man who is entitled to a statue and to a burial in Westminster Abbey—a man who is a great administrator in peace or war, who will make a great figure in history. That is not the man you need as a trustee. He may be all that, and yet he is precisely the man you would wish to exclude from such a trust; and in order to avoid having any one on the trust but those possessing the plain and simple qualifications which you require in such a trust, you should not make it a part of the ordinary duty of the Government or of the Council of India. Then you will perhaps say, Why should all this be done by Act of Parliament? There is one sufficient reason, among many others, that might be given, and that is, that Parliament really holds the purse-strings of India. Whatever we may talk about other bodies or authorities, if Parliament is determined that there shall be an expenditure in India, that expenditure will be. If Parliament is determined that a particular expenditure shall not be, that particular expenditure will not be. The purse-strings, then, are in the hands of Parliament, and you only injure India, and you do no service to Parliament itself, by putting up any screens that will diminish the responsibility of Parliament.

COMPREHENSIVE SPECIFICATIONS.*

After a design is accepted, and the working drawings for it are accomplished, many an experienced practitioner, as well as "rising young man," considers he has come, not to the end of his undertaking, but to the real "tug of war," when he begins to make out the specification. It is so imperative that a coach-and-six should not be drivable through any portion of it, to use a popular figure of speech associated with the framework of Acts of Parliament,—so imperative that no clause could be interpreted to mean anything but the exact intention of the architect, and so important that no item should be forgotten; that the compilation of a specification is a matter of moment. Some of our public offices, in view of the difficulty of the task, issue to architects engaged upon works under their control, or for which grants are solicited, a list of items for consideration, and dimensions and qualities of some of the materials recommended for use; which is, doubtless, found to be of good service. But such schedules are of limited circulation. There was an opening for an accessible, comprehensive, and suggestive list of parts and processes requisite to be remembered in the drawing up of general specifications; and an endeavour has now been made to fill it. This aid to remembrance and technical perspicuity is entitled "Pewtner's Comprehensive Specifier."

The student must not conclude he is now equipped with an assistant that will meet every emergency. Even with Mr. Pewtner's 694 suggestions he will find he has much to decide. As an illustration of the limit of the assistance rendered, we may point out that in specifying for the construction of a gentleman's house, it would not do, for instance, to describe the necessary oven in Mr. Pewtner's terms:—

"Build the oven with Welsh fire-bricks, arched over with a 9-inch camber arch, closely set, and paved with Welsh oven-tiles, 9 in. square, set upon 12 in. of concrete; the openings arched over with 9 in. camber arches, closely set; the furnace, frames, doors, and dampers fixed in the work, and the flue turned, pargetted, and cored; the whole constructed upon brick footings 6 in. high, with two 2½ in. set-offs on each side, upon a concrete foundation, ... in. deep and ... in. in width, and the whole of the work to be executed and set in Portland cement."

Obs.—Sometimes it is necessary to state the number of bushels the oven is to contain, and always, when there are no drawings, showing the construction.

He must be content, simply, with being reminded that there is a necessity to specify the kind of oven really required, and not blindly furnish a baker's oven to a private house.

* "Pewtner's Comprehensive Specifier: a Guide to the Practical Specification of every Kind of Building-Artificers' Work; with Forms of Building Conditions and Agreements, an Appendix, Footnotes, and copious Index. Edited by William Young, Architect. London: Longmans, Green, & Co. 1870."

Nor would any client be likely to be satisfied with the artistic appearance of a stained glass window, executed merely from the annexed specification:—

The to be glazed with 16 oz. stained glass, in colours, stopped in $\frac{1}{2}$ in. lead fretwork, soldered at joints, and copper-banded to the saddle-bars, tongued and puttied round.

On the other hand, though thus limited in its application, this comprehensive specifier will evidently prove a very useful work to many persons anxious to preclude deficiencies; for, although they may have thought of ninety and nine of the requisite items to be mentioned, they may here be reminded of the hundredth that they might otherwise have forgotten, to their great vexation at last. It is furnished with a consecutive index, "adapted for office use as a skeleton specification." In this index the various trades are arranged in the order in which they are generally placed in practice. After indicating the form in which the title should be set forth, the general conditions are suggested to come next, with, however, the option of giving them towards the close of the document; and then the usual clause that contractors should give the necessary notices to the commissioners of paving, &c., and the district surveyor, and obtain all necessary leaves and licences, comes in. The excavator, bricklayer, mason and pavior, carpenter, joiner, and ironmonger, slater, plasterer, smith and ironfounder, bell-hanger, plumber, zinc-worker, painter, glazier, paper-hanger and decorator, gasfitter, writer, and blind-maker, then follow each other in the order given. A section on sundries, consisting of the following miscellaneous objects, brings up the rear:—Speaking pipe, hose pipe, Boyle's patent ventilator, enclosure to bath, enclosure to lavatory, scot-door, scot plug, flap and door, font cover, slate water-closet built out, prayer-deck, blind to greenhouse, and step-ladder. These might be more candidly called after-thoughts come to mind too late for classification. The general conditions are lastly given fairly and fully. Over and above all this, there is an appendix in which much of the same ground is gone over again, with special view to utilise the information for those who require only to repair or alter an existing building, instead of erecting a new one. There is, however, a section absent that should be present in any work of the kind aiming at comprehensiveness. We mention this as a means of adding to its usefulness, should an opportunity occur of adopting the suggestion. There should be a section devoted to precautions that may and should be taken to avoid several evils, and ensure several comforts in most classes of domestic buildings:—precautions against fire, water, damp; precautions against smoke, and want of ventilation; precautions against rats, mice, and other vermin; precautions against lightning; and, as far as our present resources serve us, precautions against thieves and explosions.

The author says he has endeavoured to describe each item in detail so precisely as to obviate the misunderstandings that frequently take place between the architect and the builder, or between the former and his client, when a vague and superficial description has been prepared; and his editor, Mr. William Young, tells us that Mr. Pevsner has tried to make his work as independent as possible of drawings. We do not say that the first has been done, because that which Mr. Pevsner has specified may not always be exactly what is required, every case requiring skilful adaptation; nor do we see that the second aim is particularly desirable unless one dead level of uniformity should eventually be preferred to artistic variety. But the catalogue of materials and appliances coupled with the terms in which they can be wrought together in construction, will surely prove a valuable assistant in the offices of most architects.

The Worcester Cathedral Restoration.

Next to the donation by Earl Dudley, the dean and chapter have given 2,500*l.* towards the work, which is 500*l.* recently added to the amount at first set down for the caputular body. The dean, besides the reredos, has now given 600*l.* to the general restoration fund. The bishop of the diocese has contributed an episcopal throne, of expensive work, and has sent a donation of 500*l.* to the restoration fund. The required amount named by Lord Lyttelton and Sir John Pakington was 15,000*l.* The subscriptions now amount to more than 15,157*l.*

PHILOSOPHY OF ARCHITECTURE: A SKETCH.

WHAT do we mean by the philosophy of architecture? That is what is proposed to be shown in this paper, which will treat not so much of the orders and styles as of the causes which influenced and from which sprang the art. It is of architecture as an art, not as a science, that the writer intends to speak.*

The mere edification of huts by primitive wandering tribes on the earth, whether the material used was turf, or the boughs of trees, the closing of caverns, to render them safe for habitation, does not fall under the term architecture. Ere architecture could exist, it was necessary that men should settle on some spot of ground, should till the earth, form a community, dwelling together in what, according to its size and importance, would be called a hamlet, a village, or a town. Even this, however, would not suffice to create the art, as the huddling together of the buildings is still unworthy of the name. In order to bring it out, the people must be united by a firm, strong bond, and this bond might be either of a political or religious nature.

In early ages the bond was naturally religious, because religion then included the whole life of the people, and politics,—that is, the difference of conduct between communities,—bore at first solely on points of worship and property. But as the priests had full power, in primitive states, property was mostly ecclesiastical, and thus politics came within the pale of religion.

The settlement acquiring strength and importance, it followed that it tended to consecrate the dwelling of its god, or the representative of it, or perhaps to perpetuate the memory of some great event. A monument, which took the shape of a temple or a pyramid, was raised, and in this expression and embodiment of the thought of the nation, its architecture first revealed itself, and sprang into life; and thus, also, did architecture from the first become symbolic.

Be it remembered, moreover, that as the language of primitive races is always much more pantomimic than spoken, the face of the monument would bear certain details and ornaments destined to express words and actions.

This early architecture must have been of a colossal, vague, and indefinite character; for these reasons,—that man, when first he looked around him, saw nothing resembling regularity. The jagged or wavy lines of the mountains and hills, the vast contours of the forests, the windings of the rivers, the ever-varying shapes of plains and valleys, did not at once reveal their careful planning to him. He saw the Infinite. Let him go where he would, Space seemed to recede farther and farther before him. Its companion, Time, flowed on unceasingly with unequal change of light and darkness. His mind, thus led to seek after the vague and immeasurable, strove to grasp those two portions of the Infinite. He discovered geometry and time (applied to music). Therefore, impressed with the grandeur of the objects strewn around him, and desirous to emulate Nature, and to make the temple of his God suited to the idea he entertained of him, he imparted to his architecture that character of awe and colossal size which is its chief peculiarity. In one word, that architecture embodied the thought of a nation, and not the will of a class or an individual. It was general and undefined, and therein opposed to the architecture of our day, which is definite.

We must carefully guard, however, against a very prevalent though erroneous belief, against the belief that religious architecture sprang from the civil. It was religion that first boasted of true art, while civil life was still deprived of it. It has already been shown how religious architecture strove to imitate the magnificence of Nature. All its parts recalled some of the striking objects around: the pyramids, mountains; the towers, peaks; the vaults, caverns; the starry ceilings, the heavens; the columns, forests; and the vast horizontal lines of the buildings, the immeasurably vaster lines of the sea.

There was nothing of all this in the dwellings of the inhabitants, and thus the difference between a building visibly intended for human habitation and the temple of the god. This is strikingly exemplified amongst the Egyptians, as well as here with the early inhabitants of Britain and their Druidical religion. There were mighty altars built, which to this day remain as

stupendous monuments of religious art, but the civil dwellings were mean and wretched.

Early architecture being always colossal, sublime, and awful, did not appeal to man's love, but worked on his imagination through a primary feeling of fear. As it appealed to Nature alone for its elements, taking only the vast and gigantic, it thereby became sublime. Architecture becomes more and more beautiful as it draws its own proportions more and more from those of the human body; for the beautiful belongs to Man, and the sublime to Nature.

In architecture were first contained the other arts of design, viz., sculpture and painting. Music, the other fine art, sprang up along with architecture, and is closely allied to it. Like architecture, it was at first the expression of general thoughts, before it became the vehicle of particular passions or ideas. It is superior to it, in that it appeals solely and directly to the mind without any other aid, and in that it deals with the intangible *sound*, while architecture appeals to the mind through the eye by means of matter fashioned to its end.

In early times the architects were the priests; there was a symbolism in every building, in every detail of the building, understood only of them. They raised and served in the temple which was sacred to their god. Their class was all-powerful and had possession of the whole government, whether civil or religious; education, justice, all was theirs. In time, however, the next great class, the warrior, rose, not in importance only, but in wealth. The nobility, or richer and more powerful part of the laity, gradually became independent. It, too, acquired wealth and influence. The whole resources of the nation were now no longer lavished on the temples only; a portion was applied by the chiefs to the adornment of their private dwellings, which improved daily and culminated in handsome mansions. The laity asserted itself. Next to the temple rose the palace.

Then took place the enfranchisement of the other arts, sculpture and painting. Both lost some of their former monumental and impressive grandeur, but, on the other hand, gained liberty, motion, and life.

Yet sculpture long remained a mere basso-relievo, the one surface scarcely raised above the other; gradually the projection became bolder, and the stone was worked out, but still the figures, whether single or in groups, remained fixed in and a part of the wall. With the Greeks it reached its apogee. That nation which worshipped the beautiful, and rightly saw it carried to its greatest perfection in man, could not do otherwise than devote itself to the developing of an art which attains its highest triumphs when it represents the perfection of human beauty. So we find that they made a close and loving study of man's frame; they strove to bring out its grace and power by every means at their command; they represented it alone, apart from any other object that might distract attention from the glory of the god in human shape. In one word, the Greek nation was ruled by the idea of the beautiful, and it expressed that idea by the most glorious embodiments of it in marble that it has ever been the lot of man to create.

It will now be understood how it is that, in the mythological ages, painting always held a secondary place. It cannot and does not pretend to represent the object as it is; it gives but its semblance, as it strikes the eye, and, by the deep meaning in the painter's soul, its aspect as it strikes the mind. To the Greek, this was insufficient; to the Indian impossible. The one wanted to have the fulness of form, the tangible expression of beauty; and, in the other case, painting was powerless, because awe in the abstract cannot be represented by any combination of colours alone. Therefore the Greek expressed the idea—the worship of the beautiful—which ruled him, in his noble statues; the Eastern nations, at the root of whose religion lay awe and terror, expressed those sentiments in their formidable and sublime temples in the rock and in their pagodas.

When Christianity arose, this order of things was altered. Painting, which hitherto has played a secondary part, now rose to the first rank. The aim of religion was different; it no longer set bodily beauty above all others, but, on the contrary, despised and stigmatised it, as likely to lead to sin and idolatry. It preached the doctrine of the beauty of the immortal soul. Under such conditions, sculpture must sink, and it did. Unable to force the marble to speak, as it were, the chisel gave way to the

* We allow our correspondent to speak unreservedly.
—Ed.

brush that, with its magic colours, fixed for ever the ever-changing expression of the face, the mirror of the soul. The passions, which marble bound within its stony grasp, found free play on the canvas and panel.

In order that architecture may fulfil its purpose, three requirements are necessary; namely, beauty, appropriateness, and solidity. The rudiments of the first will be apparent in the plan of the building, and will be developed in the elevation; the second will and must be evident in the plan; while the third will be proved by the section.

Let each of these now be discussed in turn, beginning with beauty, in which shall be included the sublime in as far as it mingles with beauty, heightening the character of this quality, while its own is rendered more pleasing to the human mind.

In architecture the elements of beauty may be reduced to three,—grandeur, simplicity of lines, and continuity of lines.

To attain grandeur in a building, there must be in it at least two of its components, height, breadth, and depth; and in order that the edifice may have its full force, one of these elements must be sacrificed. Otherwise the eye and mind are not sufficiently, at times not at all, impressed with the desired feeling. For example, in St. Peter's, at Rome, which is so admirably proportioned, the first impression is far from conveying an idea of the actual vastness of size and height; and thus the effect, which ought to overawe the soul, is most disappointing. The mind, instead of being awayed one way or another, of being directed either to the earth or the heavens, remains doubtful and undecided.

Far otherwise did the Gothic architect act, when rearing the glorious fanes in which medieval Europe worshipped. The thought which worked unseen by all, unknown to many, in the Christian society, and which urged minds to aspire to heaven, asserted itself in the predominance of height over breadth. The Christian church rose to the skies, the Pagan temple clung to the earth.

Each of the elements of grandeur awakens a corresponding feeling in the breast of man: height raises the soul, elevates the mind, and inspires noble thoughts; breadth suggests ideas of calm, repose, stability and duration; depth fills the mind with awe, inspires a vague dread of the unknown, because of the obscure.

These various sentiments, as springing from each of these components of grandeur, are developed and exemplified in the architecture of the various races. The Easterns, whose religion was a vast, undefined, mysterious pantheism, had depth as the basis of their style of architecture. The rock-cut temples of Ceylon, of Elephanta, on the coast of Coromandel, all owe their greatest claim to grandeur to their mysterious depths and recesses.

The Egyptians, who firmly believed in the immortality of the soul, and believing that it would return to its former habitation a thousand years after death, were careless of the dwellings of the living, but expended all their science and art in erecting temples for the dead. They wished to secure immortality, everlasting duration for their buildings; and thus their style is characterised by great breadth and by vast horizontal lines. Even in the Pyramids, which at the first glance would seem an exception, the breadth is greater than the height.

Now, the Christians, moved by the intrinsic properties of their faith, and led by it to a contemplation of heavenly things, taught to look upwards, and to aspire ever higher, could not any more than the Indians or Egyptians, help yielding to the influence of their faith, and consequently sacrificed breadth to height. For it must be noted that they still made use of depth, for the revelation having taught the fear of God, a feeling of awe mingled with love was to be evoked in the mind of the Christian who stood in the temple sacred to his Maker.

Thus we see that all nations have had more or less to abandon one of the parts to obtain the true expression of their creed. All, save one—the Greek,—at the root of whose religion, as has already been said, lay the worship of the beautiful, embodied in man; so that its architecture, notwithstanding all its glory, was subsidiary to sculpture. The Greek alone, through his wondrous genius, balanced the three proportions as nearly as is consistent with that ideal he ever strove after; for it is evident that the three can never be perfectly equal in architecture: the result would be an infinite ugliness, a monstrosity. Nearly balanced: for the difference,

though not so striking as in either Indian or Egyptian art, or in Gothic afterwards, still exists, the breadth being usually equal to twice the height, and the length twice the breadth.

Simplicity, that second requirement of beauty, is to be carefully distinguished from mere barrenness. Because a building, whatever its nature, is totally deprived of any detail or decoration, it does not thereby become beautiful through simplicity. The mere absence of such ornament does not constitute this latter quality, which, in architecture, results from the careful elimination of all lines which are not to the purpose, of all useless surfaces and redundant decoration. Simplicity may be defined as the sober use of lines and ornament, however that ornament may be obtained. It is for this reason that the Doric temples are more striking and majestic than the lighter and more graceful Corinthian fanes; and that the Early Gothic is so immeasurably superior to the florid style of a later date.

The third, continuity of lines, is undoubtedly a great element of the beautiful. That cannot be truly and fully beautiful which the mind cannot contemplate with feelings of satisfaction; and such feelings can only be engendered by continuity. Whatever tends to break this, also tends to break the train of thought into which the mind was led, and changes its ideas from ideas of regularity and order to ideas of trouble and uncertainty. As much as Grecian art is characterised by continuity, so much is Gothic generally characterised by the want of it. Beauty also requires, besides these three great elements just spoken of, that proportion, character, and harmony, should be visible and marked.

Both in Greek and in Gothic art, proportion,—that is, a due relation of part to part,—is absolutely necessary in the exterior; but there the dual necessity ceases. The Grecian temple need not have the proportion which also demands repetition of certain features within; but the Gothic cathedral imperatively requires it. The reason lies in the fact that while in the former the worship was wholly external, the priests alone entering the cell containing the statue of the god, in the latter the worship is internal, the full congregation meeting within the church, and the spiritual life of the people manifesting itself there.

The character of a building should always be evident from its exterior. We should know, and in good works, both antique and mediæval, we do know, a church from a theatre, a town-hall, a palace, or a prison. There is an essential thought predominant in each of these; nay, many thoughts grouped under one chief idea. For instance, on entering a church, the immediate effect is an idea of the loftiness of heavenly hopes, of calm, of love, of rest, of awe, of high aspirations, which all unite in that feeling known as religious sentiment. And the greater the number of thoughts thus grouped together, the greater the beauty of the edifice. Who is there that has not felt the overpowering sense of beauty and majesty which falls on the visitor who enters Westminster Abbey?

Another point to be noticed is, that the more numerous the thoughts, the less the originality, which has also a beauty of its own, but a far less pleasing beauty; that, as the thoughts diminish in number, and gradually resolve themselves into one, the more sublime does the edifice become, and its proportions the more colossal. The feelings and ideas which boil up within the one great thought of a nation seem to have a power akin to that of the subterranean fire, and to heave the architecture of the people to gigantic proportions.

Harmony, of which the original meaning is "bond" or "tie," demands that in a building no single part should be removable or transposable without destroying the unity, and this with the parts differing from each other or similar to each other. And thus is obtained that universal law of art: Variety in unity is harmony.

Let it also be borne in mind how very important it is that unity of impression should spring even from collective variety of causes. If the work on which the architect is engaged is some serious task, some solemn building, let solemnity be throughout the ruling thought, and, however it may be modified, let it always stand out clearly and unmistakably. Let the plan, the elevation, be characterised by straight, severe lines; let there be large plain surfaces, and colour and ornament both sparingly used, and even the materials employed be of a grave, sombre sort.

The causes which influence architecture, and

which have yet to be spoken of, contain the proofs of the necessity of appropriateness and solidity, insisted upon as required by architecture. The chief of these causes are climate, materials, and site.

But first let the fact be noticed that architecture is the least independent of all arts. As has been pithily remarked by a French writer, "No one builds for the sake of building." Architecture is bound down by the end it has to fulfil; the very parts of the building, arch, window, or door, do not explain themselves. The mind invariably seeks out a symbolic or practical sense in each. But this necessity, of which the philosopher makes a virtue, the architect has it in his power to use as a means of producing beauty, and that by working out as a choice what is imposed on him as a "sine quâ non." Moreover, he has this in his favour: unlike the painter and sculptor, he has not to imitate God's handy-work; he has only to set forth his thoughts. How wondrous is the art which, out of blocks of inert, dull, coarse matter, brings up ideas of awe, invisibility, ideality!

It has already been seen how the ideas and religion of a people re-act on its architecture: let the influence of climate be now discussed.

In the East, where snow-covered mountains rise immediately above sandy plains, burnt up by the rays of the scorching sun, men dug caves and hollowed out rocks for dwellings and temples. The very pagodas which they erected seem to be imitations of the lofty mountains which surround them, while the apartments in their interior recall at once the caverns of the rock.

The Tartars, whose wandering habits accustomed them to live in tents, when they settled in China, preserved in their architecture the principle of the tent, and, indeed, the whole Chinese style of building still partakes of that character; it is eminently light and fragile.

Egypt seems to have drawn the notion of pyramids from the masses of debris excavated from the earth, and besides, the form of the pyramid, which is, *par excellence*, that of solidity, tallies still more closely with the genius of the Egyptians, in whose minds a wish for the eternal duration of their monuments was ever prevalent.

With this single exception, all Egyptian architecture is characterised by terraces and vast horizontal lines, as is natural in a country where rain is almost unknown.

Furthermore, the ideas and religious and moral character of the Egyptians must necessarily have yielded to the influence of the country, to the influence of its ever-blue sky, of its majestic, winding, regularly overflowing Nile, of its unchanging clearness of atmosphere, of its ever-blazing sun, of its landscape flooded with light and heat.

Roofing especially shows the influence of climate; it is therefore very important to notice it.

Throughout Africa, from Egypt to Morocco, in the East, and in Southern Italy, the edifices are topped by platforms. In Greece, the climate requires the roof to be slightly raised. In more temperate climes, the angle becomes more and more acute, and in Northern Europe it is very steep. The reason is that the rains in warm countries, coming down with great violence, are drained by their own rapidity; while in cooler zones they fall with less impetus, and are apt to remain longer on the roofs.

The difference of roofing also entails a difference of ideas. The flat roofs suggest repose and calm, opposed to the bustle and life expressed by the sloping.

Solidity springs from the material used and from the ways in which it is used. It should be not only apparent, but real. And materials greatly influence the aspect of architecture in this respect. Throughout Egypt, Greece, and a great part of India, the vast and easily-worked quarries of marble, limestone, and granite have given rise to imposing architecture. The fragile and light buildings of China and Switzerland draw their materials from the forests.

Thus the architecture of those two countries possesses elegance and gaiety, as contrasted with the greater stability of the other.

Site is the last point to be examined. The architect, who has, above all to deal with lines, straight or curved, must necessarily study the contrast or harmony which his buildings must have with the landscape. So it will be found that, in the majority of cases, straight lines in building are opposed to wavy lines in the landscape, so as to break the uniformity, while the

character of the building will also partake of the character of the landscape. In Egypt, pyramids and obelisks; in Greece, temples situated on heights; in the north, high buildings, cathedral towers, turreted castles overlooking flat plains. The outline of buildings, too, is, in the north, more broken and picturesque; and in the south, as already stated, distinguished by flatness, campaniles and towers here and there rising to give the necessary contrast. Further, where colour is wanting to the landscape, the buildings are more richly decorated; and no more striking example of this can be adduced than the gorgeous architecture of Venice, which rises on a waste.

Thus has it been attempted to show what are the great elements of architecture as an art. The necessities of architecture as a science flow from these, and are intimately connected with them. But they cannot be properly attained if, in any building, the aim is not made the highest, and the purpose fully borne out.

The preceding remarks do not pretend to give more than a very slight sketch of the Philosophy of Architecture; they are more intended as suggestions to be developed by abler hands. Should they serve such a purpose, the efforts of the writer will have been amply rewarded.

F. C. S.

STABLE FITTINGS AND FITTING STABLES.

THE St. Paneras Iron Work Company have done a clever thing and a useful thing. They have set up a stable at their works, upwards of 100 ft. long, and consisting of ten stalls and three loose boxes, in which are shown feeding arrangements, divisions, drainage, ventilation, paving, heating, and lighting of every variety. Taking these heads separately,—the Feeding Arrangements for stall and box show improved modes of constructing a manger to prevent the horse throwing out oats, and improved mode of supplying fresh and taking away foul water by double-action cock. Divisions,—Variety of form and substance of wrought-iron used wherever practicable; its advantages in all portions exposed to horses' hoofs. Improved mode of constructing ventilating ramps and grating-bars, cast in, not riveted, much stronger, and more durable. Drainage,—all kinds of gutters and traps shown. The Company urge wrought-iron gutter alone should be used. Part of stable fittings severely exposed to action of horses' hoofs; various plans of drainage. Paving of all sorts is exhibited; granite, Welsh and Staffordshire plain and grooved bricks, Dutch clinkers, adamantine clinkers, plain and bevelled, the Company's patent bricks. Ventilation, by shafts and through walls,—all the various known ventilators; improved mode of opening and closing wall ventilators. Lighting,—by sashes of wrought iron, with improved mitre joints and cast-iron joints, former preferred; various modes of opening and closing case-ments are shown; while beyond is a harness-room, warmed, lighted, and fitted up complete, with brackets, harness and bit cases, table, stove, and hot-water pipes. The cost of a well-fitted stall may be put at from 12l. to 15l. A visit to this model stable may be recommended.

DAMAGE TO ST. SAVIOUR'S, SOUTHWARK.

DURING the severe storm of Tuesday morning, at about half-past eight, the lofty tower of the fine old church of St. Mary Overies, otherwise St. Saviour's, Southwark, was struck by lightning, the electric force totally destroying the south-east pinnacle, and scattering the fragments in every direction. An eye-witness says that the pinnacle, which, without the turret on which it stands, is more than 20 ft. high, seemed to be lifted entire from its base, and then to burst like a shell, throwing the massive stones, of which it was composed, with tremendous force, to the ground, a distance of about 150 ft. Providentially the greater portion of the ruin fell on the tower roof and into the churchyard, otherwise loss of life would probably have resulted. Many of the stones were, however, hurled on to the roofs of the church, neighbouring houses, and warehouses, smashing their way through to the floors beneath. Whether any personal injury resulted we cannot say, but much damage was done by the admission of torrents of rain into the various buildings.

The principal damage to the church, besides the loss of the pinnacle, was done to the south

aisle of the choir. Great masses of stone seem to have struck the first flying buttress eastward of the transept, cutting it nearly into halves, and glancing outwards, carried away the parapet, tearing the metal-work of the aisle roof, and finally striking the ground with tremendous force.

Some idea may be formed of the destructive power of the electric discharge, from the fact of a stone of at least 15 lb. weight having been thrown on to the lead flat of a high house not less than 200 ft. off, whilst smaller stones were projected to even greater distances. One large fragment broke in pieces two of the iron rails of the churchyard, and bounding off the paved street, struck the opposite house with such violence as to smash itself to atoms.

The destroyed pinnacle was one of four built on the octagonal turrets at the angles of the tower. They were restored about the year 1818, and are, as may well be imagined, not in the best possible taste.

From a careful examination, it would seem that the lightning first struck the copper ball which surmounts the vane staff, and passing down the staff (also of copper) entered the pinnacle, when, meeting with material of low conducting power, it forced its way out on the north-west side, slicing off a great piece of the turret, and, scattering destruction on every side, made its way along the gutter, and thence to earth by means of the iron rain-water pipe. The churchwardens would do well to have conductors properly fixed connecting the high points and great masses of metal about the church with the earth, to act as a highway for the electricity. The present arrangement of four copper points terminating on the pinnacles is but inviting destruction from every passing storm. It is said that the tower was struck by lightning about eighteen years ago, so that this is not the first warning.

BRICKMAKING BY MACHINERY.

AT a meeting of the Manchester Institution of Engineers held on the 20th inst., a paper was read on "Brickmaking by Machinery," by Mr. J. F. M. Pollock (Pollock, Laing, & Powley, Leeds).

Mr. Pollock said that at a time when mechanical brickmaking was creating so much attention, and in a district where such outrages on civilisation had been perpetrated on those whose enterprise had led them to attempt the amelioration of the position of their workpeople by its introduction, he would fain be some able orator to disclaim against such proceedings; that making clay into bricks was one of the most servile kinds of work that could well fall to the lot of the labouring classes. However, it was not his purpose to treat on the moral bearings of the subject, but he sincerely hoped that the matter might shortly be taken up in the Houses of Parliament, and that such legislation would take place as would put an end to the perverseness with which brickmakers and others had been standing in their own light and bringing opprobrium and obloquy on their fraternity. The writer then entered into a short retrospect on machinery for making bricks, showing what an important place it held among inventors and patentees of all ages. Coming to modern machinery, he divided it into three classes, viz.: 1st, wet clay, or expressing machines; 2nd, dry, or pulverised clay machines; and 3rd, the medium of the preceding two. Mr. Pollock then proceeded to point out at some length the disadvantages of producing bricks from machines in a state either too wet or too dry;—in the first case too much drying being required before the bricks were ready for the kiln; and in the second case the granular condition of the clay preventing it from ever really cohering, and producing a brick which was too great an absorbent of moisture. The writer described machines of each class to prove his statements, and then proceeded to show the advantages derived from a middle course. He then gave an elaborate description of his patent machine, made in three sizes, to produce either 1,000, 2,000, or 4,000 pressed bricks per hour, or 20 per cent. more of common bricks. He pointed out the advantages of having a machine which would make at will either pressed or common bricks, and might also be used as a pug-mill only, if required. His remarks were illustrated by half-size drawings, and a model; and the machine was described as combining on one baseplate all necessary grinding, pugging, lubricating, moulding, pressing, and delivering apparatus. An engine, also, could be attached to and form a portion of the

machine, so as to make the driving power self-contained and form a very compact arrangement. In concluding his paper, Mr. Pollock addressed a few words to those who would hinder the introduction of machinery to supersede labour. He said, was it not at one time supposed that the steam engine itself was to ruin the working classes, and was not the same mania at work when cotton machinery was first introduced? And are there fewer hands employed than before those great offsprings of the human genius were known upon the earth? Nay, rather, has not the introduction of machinery always created a demand a thousand-fold larger than the most sanguine ever looked for? Then, why does the working brickmaker shut his eyes to these facts? Cannot he see that when bricks are made by machinery, his position will be raised from that of a drudge to that of a scientific employé? That the demand which was now supplied by numbers of little masters who could barely earn a living, would, with mechanical agency, become so thriving a business that the working man's practical abilities would become tenfold more valuable, and he would no longer need to bring his wife and children into the open brickyard to earn his living during a few months in the year, but would take his post among mechanics and other artisans who owe their existence to the mechanical resources and inventive genius of this great country. But surely the common sense of the working brickmaker could not long remain unimpressed by the false position in which he had put himself, for the inevitable current of advancement would force upon him that which he so vainly strove against.

ACCIDENTS.

A BRICK-BURNER, residing at Camberwell, went into a pit with another man, for the purpose of getting sand. The pit, which was about 13 ft. deep, suddenly fell in at the sides, and both men were buried beneath the earth. An alarm was raised, and they were soon extricated. The brick-burner was taken to Guy's Hospital, where his left leg was found to have been broken by the fall of earth. The other man was only slightly injured. The brick-burner expired from the effects of the injury. A verdict of "Accidental death" has been returned.—A young man has been killed by a falling bough from one of the elm trees in the Long Walk, Windsor Park, while lying asleep beneath the tree. Mr. Menzies attended the inquest on behalf of General Seymour, deputy ranger of Windsor Great Park. He said he had made an inspection of the tree. The branch was a living one, and had fallen about 40 ft. The tree itself was in perfect health as looked at from the outside. During great heat and great drought, branches of elm trees were exceedingly liable to fall without the slightest notice of warning, and green branches much more so than dead ones, even in the calmest weather. His attention had been especially called by Prince Christian, the ranger, and General Seymour, to the Long Walk. With respect to the tree in question, he should not have expected the branches to have been unsafe. During his experience of twenty years, he had only known one person to have been injured by the falling of a branch of any description. Witness said he constantly warned picnic parties sitting under elm trees in hot dry weather of the danger they were running from their position. The jury returned a verdict of "Accidental death."

PICCADILLY TO OXFORD STREET.

THE old proverb, not to halloo till you are out of the wood, and to take care not to count your chickens before they are hatched, are applicable to London improvements, as to other matters of daily life. We recently spoke of a "ready-made improvement" in the shape of a clearance of the existing block between Berwick-street and Rupert-street, on the south side of Oxford-street, as being warmly taken up, and apparently likely to be carried through, and we still think this to be the ultimate issue. At the same time we are reminded by our proverbs that it is too soon to congratulate ourselves, and that it behoves all whom it may concern to urge on those who have the control of this matter not to let it fall through for want of energy, or because it is so simple an improvement that it is sure to be carried out without individual exertion and perseverance. With this note of warning we leave the subject in full confidence and hope.



THE ROYAL MAUSOLEUM, FROGMORE, WINDSOR.

PROPOSED ALTERATIONS IN THE HOUSE OF COMMONS.

THE House having gone into committee of supply on the supplementary estimates, Mr. Ayrton moved that 10,170*l.* be granted for new buildings and alterations in the Houses of Parliament. These buildings and alterations were for the purpose of providing new refreshment-rooms for the members, and he explained minutely the alterations proposed to be made. One great principle which had guided him, he said, in planning these alterations was that there should be no alteration of the permanent structure of the building. He might mention that the ladies' gallery was to be altered, by giving them additional room, and removing the grating which interrupted their view of the House. An additional room for the purpose of serving refreshments was also to be provided for the reporters. There were some minor improvements, among which was the cutting down of the principal window in the smoking-room, so as to give members a view of the terrace, and if that was found to be a good arrangement a further move in that direction would be made. It was also proposed that there should be a better access to the strangers' refreshment-room, and a means whereby the privacy of the members' lobby would be secured. All these and other rooms would be *en suite*.

Mr. Bentinck moved the reduction of the vote by the sum of 7,000*l.* odd. He felt bound, after the extraordinary statements made by the right hon. gentleman who had just sat down, to traverse some of the allegations contained in that statement. The right hon. gentleman had always been known as the possessor of a strong imagination, but he had now taken a very high flight, and asserted himself to be the entire inventor of this plan for the improvement of the Houses of Parliament. According to his own statement, the right hon. gentleman himself had done everything, Mr. Barry nothing; but that assertion had no foundation in fact. No doubt, Mr. Barry did, in 1863, suggest a plan for enlarging the refreshment-room by altering the walls of the present structure; but that plan was not adopted, and Mr. Barry afterwards maintained the best plan would be to secure the conference-room and the tea-room for the purpose. There could be no doubt that the plan as ultimately presented to the House was entirely Mr. Barry's, and was part of the plan which was laid before the committee of the hon. member for Newcastle (Mr. Headlam), in 1867. In all the proceedings of that committee, and in the correspondence which took place upon it, the plan was recognised and acknowledged as Mr. Barry's; and he could not understand how the right hon. gentleman could now calmly appropriate it in this way, without one word of acknowledgment to its real author. It was preposterous to say that, because, some years ago, the right hon. gentleman had made a similar suggestion, therefore the whole merit of the plan belonged to him. The contrary of his statement was proved by the Kitchen Committee of 1867, who reported as follows:—"Mr. Barry has now suggested a plan for improving the accommodation by converting the present conference and adjoining rooms into a large dining-room for both Houses of Parliament, in lieu of the present separate dining-rooms; and they are of opinion that *this plan is preferable to any yet produced before your committees.*" In 1868 Mr. Barry was instructed to prepare a plan in accordance with this report, and the proposal for the dining-room on the ground floor was the result of the objection on the part of the House of Lords to give up the conference-room, which objection of course rendered a new arrangement necessary. But Mr. Barry met this objection by proposing to give the Lords a new room in the space beyond the lower waiting-hall, which the Commissioner of Works now intended to take, and this plan was approved by the Lords' Committee last year and also by the Kitchen Committee of the Commons, who, on the 12th May, 1869, reported that "They saw with satisfaction that in the new plans of Mr. Barry it is proposed to adopt the *original proposition* of converting the present tea-room and conference-room into dining-rooms." In July, 1869, Mr. Barry, by the direction of the Lords' committee, sent a plan and also a letter to the Office of Works. He (Mr. Bentinck) had moved for these documents, but the letter was not forthcoming, as it fully established the facts he alleged, though no one could dispute their accuracy. On the 9th of August the Commons'

committee appointed to consider "a joint service for both Houses," reported. Mr. Barry was examined before that committee, and as he had received insufficient instruction, he was only able to say that the covering estimate for the whole work would be about 22,000*l.*; but then it must be remembered that this estimate comprised more than double the works now contemplated,—a fact carefully concealed from the House by the First Commissioner, and nothing could be more unfair than to say that the Commons' committee of last year decided the plans to be unsatisfactory because their report merely stated that they were not prepared to recommend to the House that so considerable an outlay should be made at once, but thought the subject should be deferred until next year. Mr. Barry continued to be recognised as architect during Mr. Layard's tenure of office, but the instant the right honourable gentleman succeeded he reversed the policy of all his predecessors, and put into practice the fixed idea which possessed him that the worst man to be employed in these works was the man who knew what he was about. The right hon. gentleman relied upon the report of the committee of May last upon his plan, but this report was wholly defective for want of evidence. Two witnesses only were called, and they were both officials of the Office of Works. Mr. Barry was not summoned, or he would have shown how his plan had been stolen, how his estimates had been grossly misrepresented, how he could have done the present work for 6,000*l.*, and also the patent defects of the First Commissioner's plan. But the right honourable gentleman had made a most egregious blunder by not examining before the committee a single witness connected with a refreshment department, either there or in any other place, or who knew how to serve a dinner, and the result was that no satisfactory kitchen service could by any possibility take place under the proposed arrangements, and it was manifest that the subject required reconsideration. The reports of the committees of the House of Lords of this session advocated and confirmed all his (Mr. Bentinck's) objections; and, though the Lords had agreed to accept the new conference-room, they had not withdrawn any one of their unanswerable objections to the scheme. But if common sense and expediency did not demand the employment of Mr. Barry, the Government were bound to this by their own declaration. On the 13th of May, the Chancellor of the Exchequer had expressed an opinion that Mr. Barry ought to be employed on architectural works in the House; and how could he retreat from that position with honour in the case in point, where main architectural features of the House were proposed to be obliterated and altered. The architectural objections to this scheme were:—1st. That the Lower Waiting Hall would be entirely destroyed in effect by cutting off the branch which intersected the corridor. 2. That the continuity of corridor, one of the main principles of the building, would be permanently interrupted. 3. That the new conference-room, which was to be architectural in character, was supported upon columns in the court below, carrying a projection of above 11 ft., and darkening all the rooms below. It was manifest that such works could not be properly executed by obscure clerks, but only by a competent architect. The practical objections were, if possible, even more serious. The kitchen was small, and ill ventilated; and it was impossible the kitchen service could be carried out, the kitchen being only 90 ft. from the serving-room, which, according to the testimony of the managers of two of the largest clubs in London, would render it impossible to dine fifty or sixty gentlemen who might rush in for dinner on a busy night. The place where the dinners would all be brought up he proposed to construct out of an elaborate Gothic porch which would bring all the dinners of the House into a place where there was neither light nor air, the effect of which would certainly be to create unpleasant odours and intense heat. Then he proposed that the bar should protrude into the room itself. But it was impossible to have wines and liquors served properly in such a place, because there was no air, and the heat would be too great. A place for wines had been entirely forgotten. Now, it was absolutely necessary, where wines might be called for in a hurry, to have the place in which they were kept on the same floor as the dining-room. Apart entirely from aesthetics, this plan would not do. The last thing for his right hon. friend to do would be to leave out the item, and let the matter be considered next year. The governing

party invariably had an official to "meddle and to muddle." Lord Russell used to fulfil this function; but the right hon. gentleman (Mr. Ayrton) had taken his place with great aptitude and effect. He begged to move the omission of the vote, in order that the question of re-arrangement of the refreshment-rooms should be more fully considered.

Mr. B. Cochrane deprecated any alteration which would look like ingratitude to the late Sir Charles Barry, and saw no reason why the opinion on that question of his son should be disregarded. This was the old story of squandering public money by false economy.

Mr. Cowper-Temple was sorry that his right hon. friend had entered into a comparison between himself and Mr. Barry in regard to architectural matters. "The scheme seemed to him very faulty."

Lord J. Manners expressed his regret that the plan of Mr. Barry had been departed from. Though more expensive, it was by far a more complete and perfect plan. He protested against alterations in the present building being undertaken by gentlemen who, however trustworthy and eminent in their profession, were not professional and skilled architects. He still hoped that the right hon. gentleman would call in the services of Mr. Barry.

Mr. Gregory concurred, and Colonel W. Patten thought they ought not to make so large an alteration as that now proposed without taking the opinion of a competent architect.

Mr. B. Hope supported Mr. Barry's scheme for altering the dining-room, and condemned that of the Board of Works.

The vote, however, was ultimately agreed to.

OFFICE OF WORKS, &c.

On a vote of 22,028*l.* for salaries and expenses connected with the Office of Commissioners of Works and Public Buildings, Mr. Bentinck moved that the salary of the Director of Works and Buildings be reduced by the sum of 750*l.* He said that as he only wished to show his want of confidence in the new policy of the Government, he should be glad to reduce the sum to a mere nominal amount. Until the right hon. gentleman came into office the principle had always been adopted in the Office of Works of having a salaried and professional architect to advise the First Commissioner. The right hon. gentleman, however, had re-united the functions previously discharged by Mr. Pennethorne and Mr. Ferguson in the office held by Captain Galton, who was not a professional architect. The result of this arrangement did not come out until the debate on the dismissal of Mr. Barry. He (Mr. Bentinck) complained that Captain Galton had been placed in a position which he was not qualified to fill, inasmuch as he had to perform architectural duties, and he also complained that the Board of Works should be left without the assistance of a consulting architect.

Mr. Gladstone said that when the hon. gentleman stated that it had been determined to have nothing to do with architects at the Board of Works, he was mistaken. Far from the Office of Works not having the assistance of an architect, they thought it would be better to employ one, if necessary, from without the department. Thus, by appointing Captain Galton, who was thoroughly acquainted with construction, but not with architecture, they would avoid any difference of opinion if they at any time wished to consult a special architect in order to carry any important work into execution. He maintained that if the First Commissioner of Works had had competent advisers to have given advice, as practical constructors, in connexion with the Houses of Parliament during the last thirty years, a very considerable saving of expenditure would have been effected.

Mr. Beresford Hope said he regarded the creation of the new office of assistant-surveyor of works as the turning-point in this new system. The new policy of the Government was to dispense with the services of eminent architects, and to entrust the architecture of our public buildings to a mere clerk of works. The circular advertisement of the First Commissioner of Works, inviting competition for the office of assistant surveyor, set forth the qualifications that were required in the candidates, who must be competent to design and superintend the construction of buildings, and be capable of writing reports of the works without any blunders in orthography. What, then, was the use of advertising for a man to design and superintend the construction of buildings if he was not to be called upon to do so. There was ground for suspecting that the policy of the Board of Works was to dispense with the consulting architect and with the services of independent architects of eminence, and entrust the designing and superintending of the works to a mere underling, who was to be brought in to represent the national taste in the architecture of our public buildings; and it was the duty of the Treasury bench to say whether that really was the scope and object of their present policy.

Lord J. Manners thought that the question of his hon. friend the member for Whitehaven had not been answered. What he wanted to know was, who was the architectural adviser of the Board of Works, and whether architectural advice could be obtained from Captain Douglas Galton. He (Lord J. Manners) thought that a better system could be devised, and he was glad that his hon. friend had called the attention of the committee to the subject.

Mr. Ayrton desired to remark that the duties of his office were regulated by statute law, and, in fact, his own position was little better than that of being a superior Treasury clerk. In the Office of Works there were gentlemen called assistant surveyors, but they were, in fact, architects, and carried on the business of architects in the Office of Works. The director of works was an officer of great importance, and one who rendered valuable service to the public. Before the employment of an architect, and hitherto there preliminary questions to be considered, and hitherto there had been no one responsible for a saving to the public, not of that the change would affect a saving of thousands.

Mr. Monk said he had listened with dismay to the Chief Commissioner of Works. If we were to have a director of works, he ought to be an architect.

After some further conversation, the vote was agreed to.

THE DECORATIONS OF THE CENTRAL HALL.

Mr. Ayrton stated, in answer to questions, that nothing had yet been determined; but having placed the matter in the hands of six or seven artists of eminence, he should be guided very much by their opinion.

The committee are Mr. Cope, Mr. Ward, Mr. Watts, Mr. Armitage, Mr. Poynter, Mr. Horsley, and Mr. Herbert.

PARLIAMENTARY.

WESTMINSTER CHAPTER-HOUSE.

On the vote of 6,395*l.* for the repair of the Chapter-house at Westminster.

Mr. Goldney asked for an explanation, and Mr. Ayrton said the shell would be completed for 30,840*l.*, and it would then be for the House to determine what should be done with it.

THE EMBASSY BUILDING AT CONSTANTINOPLE.

On the vote of 41,610*l.* for the British Embassy and consular establishments at Constantinople, and in China and Japan, being taken, Mr. Rylands complained of the past expenditure as being altogether unsatisfactory, and Mr. Candlish expressed a hope that the British Embassy at Constantinople would not be rebuilt without Parliament first having had an opportunity of considering the matter.

In reply to Mr. R. N. Fowler, the Chancellor of the Exchequer said the building was not insured, adding that the site was one which had the advantage of very cool air. The walls of the building were almost entire.

THE NATIONAL GALLERY.

Mr. B. Hope called the attention of the House to the present condition of matters relating to the plan for the enlargement of the National Gallery, complaining that all the correspondence in reference to this subject which he had a right to expect had not been laid upon the table. Having asked for important papers, he had been fobbed off with antiquated and obsolete returns, which only left the subject he wished to elucidate more complicated than before.

The Chancellor of the Exchequer announced that the Government had come to the conclusion that it would be possible to do something in the direction of the enlargement of the National Gallery during the present session, and a supplementary estimate would be laid before Parliament for the purpose in a few days.

VENTILATION OF SEWERS.

A PAPER read at the Liverpool Polytechnic Society by Mr. T. C. Thorburn, C.E., Surveyor to the Birkenhead Commissioners, on the method adopted in Birkenhead for ventilating sewers, and carrying away the gaseous emanations generated therein, has been recently printed, and may usefully be made more public:—

In the district under the control of the Birkenhead Commissioners there is a length of about 60 miles of roads and streets, laid out or constructed, and the length of main or common sewers laid down or constructed under such roads and streets is about 42 miles.

The area of the district is about 1,684 acres (with levels varying from 24 ft. to 184 ft. above Old Dock Sill), but the total area within the watershed, for which the main sewers act as an outlet, includes part of Tranmere, and is something like 2,224 acres, in addition to which there is a large agricultural district drained by the fender brook, and thence through the great culvert, parallel to the docks, into the river Mersey, at a point near the north end of the Woodside stage: the area of this district is about 13,800 acres, equal to about 21½ square miles.

The drainage area of the town is divided into three districts, each of which has a separate tidal locked or flood-flapped outlet into the river.

The length of streets laid out and sewered in Birkenhead is at present out of proportion to the number of buildings (8,200, with 4,200 water-closets), and a population of about 50,000, giving a density, including the area occupied by the Dock estate, of 30 per acre, and, exclusive of the same, about 41 per acre, or something like one-third the density of the population of Liverpool. The dual use, therefore, for which the sewers are ultimately intended to answer, if they are to continue to be used as at present, viz., the carrying off by suspension in water of the sewage matters discharged from the dwellings of the inhabitants, as well as the surface drainage, being therefore limited and out of proportion to their capacity, or to the purposes that they will ultimately be used for when the town becomes fully built upon. Hence we have not in Birkenhead the same amount of deleterious gases to contend with in the sewers as is to be found in the sewers of Liverpool, where the population is so much greater per acre, and the sewage largely diluted, or mixed with the refuse from chemical or other similar works.

The ventilating shafts, therefore, erected in Birkenhead, have not been so severely tested as they would have been if erected as part of the Liverpool system of sewers, in connexion with which it appears from the last report of my friend Mr. Newlands, the borough engineer, that there have recently been erected 1,030 Archimedian screw ventilators fixed at the termination of pipes, in connexion with the sewers, attached to the houses, and carried up to the top of the buildings, as recommended by the Mortality Sub-committee in 1866.

The principle of the ventilating shafts erected in Birkenhead by me of recent years will be easily understood from the drawings now submitted for the information of the society.

These ventilators are for the most part constructed adjoining the vertical manhole entrances to the sewers from the roads.

Each shaft is provided with a galvanised iron wire basket of 1-in. mesh, 10 in. square, filled with small wood charcoal for a width of 6 in., fixed in a short horizontal gallery between the opening through the crown of the sewer and the upcast shaft, terminating at the surface of the street, in a position so as to protect the charcoal from being saturated with rain-water falling through the surface cast-iron grating, fixed on the top of the shaft, level with the street.

The manhole entrances are found to act as downcast shafts, thereby facilitating the draught of gas through the charcoal filter fixed in the ventilating or upcast shafts, very much on the principle of syphon ventilation.

These ventilators are found to answer their purpose effectually, and very little, if any, trace of deleterious gas or unpleasant smell is perceptible at the grating in the street. It is estimated that about 90 per cent. of the sulphurated hydrogen or other gaseous emanations from the sewers is intercepted in passing through the charcoal filter. (See Report of Mr. Tate's tests of the emanations of gas from sewers.)

The number of these sewer ventilators constructed in connexion with new works is 4 double (a), 53 single (b); and the number in connexion with old sewers, 16 (c). In the latter case, the charcoal basket is fixed in a horizontal gallery, constructed near the top of the manhole entrance, with an outlet to the street similar to the others; the total number of ventilators constructed up to the present time being, in all, 73.

The principle upon which they are arranged is on the main lines of sewers at every junction, and at the termination of the collateral sewers in the side-streets and courts.

It is intended to extend the system to the drains in courts and back passages, where they will be constructed at the termination of each line of drain, on the same principle, but on a smaller scale.

Many of these ventilators have been in use for upwards of four years; and, while we have had complaints of unpleasant smells emanating from untrapped gullies, we have never had any complaints during that period of any disagreeable emanations from the grids over the ventilating shafts.

The adoption of the Archimedian screw ventilator in Birkenhead has been limited to one instance, where it was fixed in connexion with the new water-closets recently erected at the Market-hall; and the connexions with chimney-shafts have been secured in two instances—one at a low level in Park-street, and the other at a high level in Oxtou-road, all of which have been found to act efficiently.

The objection, however, to connecting furnace-chimneys with sewers is, that it is found in practice that the area ventilated is limited to a distance sufficient to replace the gases drawn out of the sewers and drains by air from the streets and houses of the district, through untrapped gullies or other openings; and that it has a tendency, while at work, to untrap the gullies fixed at the inlets to the drains; and, when out of work, such inlets form outlets for the gases generated in the sewers; and therefore, at such times, dispersing the sewer gases into the air of the streets and dwellings of the inhabitants of the district; or, in other words, such a system is violent, local, and intermittent in its application.

In certain states of the atmosphere, the gases discharged from the Archimedian screw ventilators are found at a lower level than the point of exit, and therefore become mixed with the air at too low a level.

Vertical shafts provided with baskets filled with charcoal, which answer all the purposes of a deodoriser, are, in my opinion, better adapted for rendering innocuous the aqueous gases emanating from sewers (vide Mr. Tate's tests) than either chimney shafts or Archimedian screw ventilators, as they allow of a natural diffusion of the deleterious gases by their own specific gravity, and pass them into the air of our streets comparatively harmless, and are superior to the plan recommended in the Parliamentary blue-book, by the inspectors of the Local Government Act Office, where the charcoal trays are fixed horizontally in the manhole entrances, and require to be removed when access is required to the sewer.

The extra cost of constructing the ventilators,

according to the various arrangements, is as follows, viz.:—

For plan a (double ventilator, constructed at the summit level, when two lines of sewers run in opposite directions), 2*l.* 12*s.*

For plan b (ordinary single ventilator placed on the line of brick sewers), 1*l.* 8*s.* 3*d.*

For plan c (a modification of b to adapt it to old manhole entrances), 16*s.*

The parts of sewers where ventilators are most required are at "dead ends," and the summit points of termination of the system.

Other means of ventilating the sewers suggest themselves, such as conducting the shafts through the columns of large lamps, fixed in open spaces, and provided with gas jets kept constantly burning inside the shaft or column, to facilitate draught, and to destroy the deleterious gases as they are drawn out; but as yet I have had no opportunity of testing this mode of sewer ventilation, which I am inclined to think would be effectual, and comparatively harmless to the inhabitants of the adjoining houses, and not likely to contaminate the atmosphere of the surrounding district to any appreciable extent.

Some years since I connected two or three flues in a large mansion in the country, with the system of sewerage and drainage provided for the same; but from the experience there obtained of house-flues as a means of ventilating sewers, I do not think that they can be safely used for that purpose. It is found that the objection urged against the use of factory chimneys, as a means of sewer ventilation, is more or less applicable, to an intensified degree, to the use of house-flues for the same purpose.

The roof rain-water conductors, or drop spouts of houses, have been extensively used as a means of ventilating sewers, but experience has shown that such pipes are not adapted for this purpose, as the joints are seldom, if ever, made air-tight.

The same objection more or less applies to special ventilating pipes attached to houses, which have in many towns been erected in connexion with the sewers.

No drain should be carried under a house without having a proper trap fixed or constructed outside the external wall of the building, and all soil-pipes should be ventilated to the external air, and, where possible, a current of air should be secured between the water-closet and the house.

By strict attention to these and other like matters, in the laying down and construction of systems of sewers and drains for the carrying away of the sewage and drainage of the dwellings in our towns, many of the evils and unpleasant effects now complained of will, for the most part, if not wholly, be removed.

The question as to the length of time that ordinary wood charcoal will effectually act as a deodorizing agent of sewer gases is one that I feel incompetent to give satisfactory answer to without further experience. The charcoal that I have used for this purpose has hitherto, in my opinion, not required renewing, although in some cases it has been in constant use for upwards of four years.

I have to acknowledge the assistance of Mr. Norman Tate, who has this day made an experiment with the sewer gases issuing from the Birkenhead sewers, through the charcoal filter above described, and from the manholes direct, from which it appears that only a trace of sulphurated hydrogen was detected in the gases issuing from the former, while from the latter it was very perceptible.

The question of the durability of the charcoal, as an effectual means of deodorising the noxious or deleterious gases issuing from town sewers, is a very important one, and no doubt the chemical members of this society will give their valuable aid in elucidating the question.

The ventilation of sewers in a harmless manner is a very important question, and no doubt its discussion by the members will throw considerable light upon the subject.

My own efforts in endeavouring to elucidate the problem have been done in a quiet way; there is no novelty in the deodoriser made use of, but I believe the arrangements explained, as recently adopted by me for the ventilation of sewers in Birkenhead, are convenient, self-acting, and effectual in their operation.

Royal Academy.—The exhibition will close at the end of this week. There is still time for those not the best off to see it for 6*d.* No one who really wishes to see the pictures of the year will find this sum an obstacle.

BLESSING BELLS.

UPWARDS of 2,000 persons assembled in the Catholic Church of St. Francis Xavier, in Liverpool, on Sunday last, July 24th, in the afternoon, to witness a novel ceremony, at least, in this country. This ceremony was the blessing of a new peal of bells by the Catholic Bishop of Liverpool, previously to their being placed in position in the tower of the church. The Church of St. Francis is served by priests of the order of Jesus, and is a large and handsome structure. For some time it has been in contemplation to set up a full peal of bells, and recently a purchase of a set was effected from Mr. John Murphy, the bell-founder, of Dublin, at a cost of 500*l*. They are in the key of F. They weigh collectively 3½ tons, the largest bell being 16 cwt. For the purpose of the ceremony they were hung on temporary framework, within the altar-rails. The bishop, attended by a large number of the clergy, first blessed salt and water, with which the bells were washed, and afterwards dried them with linen cloths. They were then anointed with "chrism," in the form of a cross, at which each bell received the name of a saint, the tenor taking that of St. Francis, the patron saint. Incense and myrrh were then placed in the thurible, and this was placed under each bell in turn, so that it received the whole of the smoke, when, after the recitation of prayers and a portion of a Gospel, the ceremony concluded.

St. Francis's is the first and only church in Liverpool which can boast of a full peal of bells. How far such a ceremony as the above is in accordance with the spirit of the age, would be a somewhat difficult matter to define.

POSITION OF CATHEDRAL ORGANS.

THE suggestion of "G. M." as to burying the organ alive in a well below the floor is not new to me, though I do not remember to have seen it in print before. There would be some manifest objections to carrying out such a scheme in its entirety. The expense of constructing the vault so as to insure dryness, the absence of daylight for repairs and tuning, are among these: the latter not to be under-rated, for the more daylight you can get to the interior of an organ the better; mechanical defects are then more easily perceived and remedied, with less chance of fire from careless candle-holding. The musical effect of such an arrangement is doubtful; for soft passages it would probably have a good effect; for loud passages on the "full organ" probably not: there would be a clamour of sound just over the opening, which would not adequately reach other parts of the edifice. "G. M.'s" proposed sounding-board "at an angle of 45 degrees" to obviate this, would surely be a greater error than the organ itself; and indeed there are probably few architects who would wish to bury the organ completely out of sight; for every one must admit that, if reduced within moderate proportions, an organ-case is an opportunity, though a much neglected one, for the display of decorative treatment both in form and colour.

A partial adoption of the burial suggestion might, however, be made with successful results. In the case of a cathedral organ, for instance, the smaller parts (say all the manual pipes) might be placed in the customary position in the choir screen, and the pedal pipes might be partially buried in ranks, on each side of the entrance, from nave to choir, so as not to project far above the floor, and only to require a low screen to cover them, which would not materially interfere with the vista. The pedal pipes would then be in their best position, almost, for sounding individually, would be massed together, and would not be so far from the rest of the organ as to prevent their blending with it to produce a homogeneous effect. In the case of smaller organs, for ordinary churches, where, owing to the plan of the church, these have to be placed in the "organ-chamber," which has, unfortunately, become so universal, an excavation of about 4 ft. below the floor of the church, and building up the organ from that level, would neither be difficult nor expensive, and would go a great way to help the effect of the instrument, by avoiding the necessity for bringing the larger pipes up with their tops close against a roof or ceiling, as is often the case with instruments placed in a small organ-chamber. This suggestion was actually made, in a case that came under my notice, by a very high authority on organic matters.

In the case of new churches, a great deal of the organ difficulty is chargeable solely upon the architects, who, though perfectly aware that an organ has to be put in the church, make no proper provision for it, take no trouble to ascertain what are the best conditions for placing it, and then are angry with the organist and the organ-builder for doing the best they can under the circumstances, and complain of them for "spoiling the architectural effect." This is not fair; but indeed it must be said that organists, as a rule, have been treated with great contempt, not to say contumely, by the architects; and this very natural wish to obtain an effective position for a fine instrument has been considered quite beneath attention on the part of the latter. We all know Wren's contemptuous expressions about the "box of whistles" in his cathedral; and it is on record, that when so eminent a musician as Dr. Wesley expressed his wish to have one end of St. George's Hall in Liverpool reserved for the grand organ which it was proposed to place there, he was contemptuously answered by the architect, "Do you suppose I made my building to be a case for your organ?" Those who now go to that room to hear the performances of one of the finest of living organ-players on an instrument of exceptional grandeur and perfection, and find half their pleasure therein destroyed by the preposterous echo which blurs all the outline of the music, may be excused for wishing that the architect had condescended to consider the subject a little, and that the building were a little more of "a case for the organ" than it is. If the architects would treat the organists as one artist should treat another, and consult with them for the achievement of a satisfactory acoustic and architectural result, when an organ of any size is to be erected in a building, there might be fewer causes of complaint on both sides afterwards. S.

THE UNEMPLOYED POOR.

SIR,—The London Registrars of the Cosmopolitan League of Industry having had their attention directed to the article in your issue of the 9th of July, 1870, entitled, "Lands that want Hands," have unanimously voted you their thanks for your able advocacy in that article of the interests of the British poor and industrial classes, and in the propriety of that vote, I, as chancellor of the League, entirely concur.

The object of the League being "the general advancement of the moral, mental, and material interests of all persons engaged in useful arts, trades, occupations, or pursuits," its London registrars view with serious apprehension the neglect of the British Legislature in not having provided at the cost of the State, the means for the emigration or home employment of the unemployed poor; and they agree with you, that if this question be not solved on the side of common humanity, a still increasing number of the best and most useful working members of the British community will be forced outside of that tacit and equitable compact of mutual interest and advantage, upon which, under various dominating circumstances and phases, all human society has been originally based; and by the faithful observance of which compact society can alone cohere and progress, and, while giving full scope to its various individual and corporate energies, feel itself individually and collectively secured in its liberties and rights behind an ideal, but, in effect, adamantine bulwark of law and order.

The London registrars of the League believe that the only really noxious or dangerous units of any aggregation of men, are those who are uselessly employed, or absolutely idle; and they agree with you, "that the most anxious care of the most provident statesmen is demanded by the necessity, not only of guarding against the inroads, but of checking the increase of the members of the dangerous classes;" and they further believe that the establishment of well-organised systems for emigration, home colonisation, and useful public works' construction, is absolutely required to meet the present exigencies and prospective necessities of the British poor and industrial classes.

In view of the statements and information I have received as chancellor of the League, combined with information previously acquired as consulting engineer of the former Tidal Harbours Commission, and as judicial inspector and surveying officer under the late harbour branch of the Admiralty, it becomes my duty authoritatively to pronounce that while thousands of the British poor and industrial classes are dying a lingering death by semi-starvation, or by diseases incidental thereto, numerous public works are needed in the execution of which the mass of the persons employed would require comparatively little skill or previous training; and I may also point out that even in the case of those who were weak from previous residence in close towns, or employment upon unhealthy or sedentary occupations, good feeding, and a moderate and gradually increased amount of healthy and open air exercise would tend to the rapid physical renovation of themselves and their offspring.

Reservoirs for the storage of water are needed in districts where human beings and cattle are periodically subject to severe and distressing droughts. Existing harbours require improvement, and new ones are needed for refuge and for commerce; rivers long neglected and navigations impeded should be cleared out and improved to facilitate tidal and arterial drainage, and to cheapen the internal transit of bulky and heavy materials and goods; trees need planting in suitable localities to form public forests, parks, road avenues, and pleasure grounds; new territories might be gradually reclaimed from the sea; unsanitary and barren tracks might be drained or otherwise treated so as to add a large area to the existing healthy and habitable land under pasture or cultivation. And, in addition to the present and lasting benefits which the execution of such works would confer upon the community,

if a system for their control were devised and enforced, in which there was an absence of useless and overpaid functionaries, and a sternly honest administration of the moneys employed and received, it might reasonably be hoped, that besides relief from time to time affording a necessary and undergirding relief to the poor and industrial classes, many of those works might be made to yield an ample return to the public Treasury.

J. G. C. C. GODSMAN.

THE HOUSE IN PARK LANE.

SIR,—May I request that you will kindly add to the information contained in last week's *Builder* the fact that the parquet floors laid in the two drawing-rooms, boudoir, and ante-room of Sir D. O. Marjoribanks's new mansion were executed at the London Parquet Works, by

CHAS. STRIMITE.

TO SOFTEN PUTTY.

SIR,—In reply to your correspondent as to softening putty,—Soft soap, it is said, will in a few hours soften the hardest putty.

G. H. RIDSDALE.

THE STORM IN LONDON.

WARNING.

SIR,—Perhaps the coincidences of the storm in London on Tuesday morning may appear to justify the special warnings which were published in the *Builder* in a full anticipation of the events, when the necessity of providing for storm outfalls, and other suitable provisions, were distinctly pointed out, with the view to meet the emergencies, both with respect to overflow from sudden rain during a storm, and the proper protection of buildings from lightning.

The remarkable and, indeed, unprecedented characteristics of the past five months would suggest that causes are now in operation that are worthy of being investigated by sincere and scientific bodies of men, as it is impossible to assume that the systematic magnetic observations are concluded, or that a perfectly normal state of things exists at the present moment.

With the desire to protect building property, it will still be quite necessary to remember that the barometer has been without any considerable fluctuations for a very long period of time, and continued very high above the average; at the same time that an increased heat exists in the atmospheric temperature calculated to develop and to mature a series of provisions for ultimate meteorological compensations, and for the salutary restorations to the usual climates in different parts. It taken time to accumulate and store up the electricity; and I venture to state that we have only had in the late storm an "exemplary instalment" of the fund of water in store for us; which is most valuable as a natural element for our use, but most destructive to artificial town restraints in the event of obstructions, or unsuitable adjustments.

The second instalment of water may come much sooner than we anticipate, and subject exposed positions to temporary inconvenience, and not a few to serious losses.

"*Immensa est potentia calis.*"

ARTHUR GRATING.

CHURCHES NEAR LONDON.

St. Peter's, Paddington.—On the 23rd ult. this church was consecrated by the Bishop of London. It is situated in the Harrow-road, and has a district assigned to it taken out of the parish of Holy Trinity. The church is built to accommodate 1,190 persons, 920 seats being on the ground-floor: galleries being intended in the transepts and at the west end. It consists of nave, aisles, transepts, and chancel, with a vestry on the north side and organ-chamber on the south side of the chancel. The tower and spire at the south-west angle of the nave are not yet built. The columns of the nave arcade are of polished granite, with carved capitals of Bath stone; the other columns in the chancel and transepts are of Devonshire marble. The cost of the church, as far as at present completed, including the heating and lighting, is about 6,000*l*. The architects are Messrs. Newman & Billing; and the contractors Messrs. Dove, Brothers. The incumbent, the Rev. W. H. O'B. Hodge, has been assisted in the raising of the necessary funds by a grant from the Bishop of London's Fund, by an anonymous donation of 2,500*l*, and by subscriptions from many friends. The site was given by Sir John Neeld and his lessee, Mr. Vigers.

St. Luke's, King's Cross.—A church, called St. Luke's, King's Cross, was built some years ago upon the present site of the St. Pancras station of the Midland Railway. When it was resolved to build this terminus, the Midland Railway Company gave 12,500*l*. for the existing fabric and site, and by a special Act of Parliament, leave was given to build a church with this fund upon another site, and form a new parish, the original parish, as well as the church, having been almost swept away to make room for the buildings of the Midland Terminus. The site of the present church and parsonage was given by Christ Church, Oxford, and a parish fund out of the surrounding districts, and out of the fund obtained from the Midland Railway, greatly diminished by the ex-

penses of obtaining the Act of Parliament, the present church and parsonage were built. The contract for the church was 9,391l., and for the parsonage, 2,615l. The entire cost of the church, including railings and facing round church, stained glass, warming apparatus, &c., will have amounted to about 10,500l.; that of the parsonage to about 2,750l. The contractor was Mr. Thomas Williams, of Cardiff and London; and the architect, Mr. Basil Champneys. The stained glass was executed by Messrs. Heaton, Butler, & Bayne, from designs by Mr. Henry Holiday. The material of the church and parsonage is red brick, of a dark tint. The stone used is from the Tisbury and Hollington Quarries.

St. Matthew's, Limehouse.—This district having been successfully worked by a missionary clergyman, in connexion with the London Diocesan Home Mission, and a numerous congregation having been drawn together, the present temporary place of worship being found inadequate, a church is about to be built in the Commercial-road, near the Stepney Railway Station, to accommodate about 700 persons, at a cost of 4,500l. The site was purchased by the Bishop of London's fund, who also contribute largely to the building funds. The remainder of the cost has been nearly entirely raised by subscriptions, aided by an anonymous donation of 1,000l. The plans have been prepared by Messrs. Newman & Billing, architects.

TELEGRAPHIC MUSIC.

ONE of the things not generally known is the fact that our Government has generously, though inadvertently, supplied the dwellers in towns and suburban districts with cheap music. Just before the post-office authorities looked over the then existing telegraphs numbers of workmen were engaged in extending the lines to villages inland on the tops of poles; like gigantic clothes-lines, in fact. These lines were single wires of galvanised iron; and when stretched tight and agitated by a gentle wind, gave out alternately two notes in a minor key, of a most melancholy strain, reminding one of Sam Slick's account of the singing by the black "help" of the song, "Oh no, we never mention her," and causing him to observe that he wished to Heaven she never would mention her, unless she could do it more cheerfully. Similar feelings have been produced in the dwellers near any of these monster Eolian harps, especially if a "bight" had been taken round their chimney, or fixture made on their roof. The house, or row of houses, was then thrown into vibration, and formed a kind of sound-board to the string. On this matter being represented to the Post-office authorities, they promised to remedy it, by placing a double-spun wire in the place of the single wire, averring that that could not "sing;" but the wind is too much for them, the second wire "sings" as well—or ill—as the former one. Can any of the readers of the *Builder* suggest a remedy? E. G.

SOMETHING PREPOSTEROUS.

THE following tenders have been sent in for painting and decorating two villa residences in Kew-road, for Mr. Thomas Agus:—

Brown & Eldridge	£250 0 0
Bickley	178 0 0
Shepherd & Reid	156 0 0
Hanks	125 0 0
Frond	116 0 0
Johnson	110 0 0
Southwick, Brothers	105 0 0
Boulton	94 0 0
Batten	90 0 0
Sargeant	89 10 0
Ross	80 0 0
Ransom	75 0 0
Pickford	75 0 0
Picknell	51 10 0

As a parallel, we give the tenders just now delivered for painting and other works at the Vestry-hall, Chelsea:—

Church	£226 0 0
Elliott	197 0 0
Sansom	150 0 0
Augier	137 0 0
Sawyer	117 0 0
Buckley	117 0 0
Smith	114 0 0
Whittle	99 0 0
Seal	89 0 0
Turrell, Brothers	70 0 0
Winchester	53 0 0

Apart from the scandalous differences shown, a curious coincidence is observable.

CHURCH-BUILDING NEWS.

Burstead.—The church here has been re-opened after having been repaired. The work recently carried out was mainly confined to the roof, which, before the restoration, presented symptoms of dilapidation. Up to a recent date the tiles, lying upon laths, with no mortar under them, showed themselves between the beams. The old beams have been renovated and stained. The tiles are set in mortar, from which the beams stand out in relief. Probably the original outer covering was lead. In addition to the roof, some attention has been paid to the east wall, which was restored some years ago by the Ecclesiastical Commissioners. The mortar of this wall, of indifferent quality, remained soft and damp. It has been removed, and the wall faced with tiles. At the foot of the east window is a piece of work by Mr. Day, of Ipswich, executed on zinc, including the *Agnus Dei*, with Alpha and Omega, and the sacred monogram, at either end. In the chancel, stalls have been erected for the choir and one for the clergy. The cost of the work was about 80l. The architect was Mr. Barnes, Ipswich; the builder, Mr. Welham, Hintlesham.

Chiddingfold.—The church of Chiddingfold has been re-opened after a restoration. The tower has been raised 14 ft., giving room for its peal of five bells, and for the ringers; but its little spire remains. The Georgian apartments have been removed, and the old oak sittings have been cut down, and are open. A new east window has been put in, with three chief lights representing, centre, the Crucifixion; and beneath, St. Paul shaking the viper into the fire; while on the right-hand side is the Resurrection (Christ appearing to Mary); and on the opposite light is the Nativity, Peter on the sea; with some minor subjects, in both lights, as well also in the upper panels. The table is of polished oak, and is backed by a reredos and "super-altar" of alabaster, with panels, having in front in the centre a white cross, standing in a miniature porch. The inner chancel is paved with Minton's glazed tiles, and the remainder of the church with plain coloured tiles alternating. The alterations consist principally of a new north aisle, new church aisle, new roof, the restored tower raised, the work being executed in Bath, and in some parts Purborough stone. A new clock has been placed in the tower, and the bells re-hung. The whole of the alterations have been made from the designs of Mr. Woodyer, the church architect, and executed by Mr. Harris, of Woking. The church will seat 500 persons. The total amount of the contract for the alterations and rebuilding was 3,000l., but extras will bring it considerably over this. The reredos was executed by Mr. Nichols, and the stained glass window, by Mr. Warrington.

Gravesend.—The foundation stone of the new chapel for St. Andrew's Waterside Mission has been laid. A lady, who desires that her name shall not be published, has offered 1,000l. for the erection of a memorial chapel. The committee then resolved to purchase a strip of land 17 ft. wide, to the west of the present building, and to obtain from the Thames Conservancy a grant of 20 ft. on the river side. To quote the words of the report, they "have undertaken the purchase of the site, the construction of the sea wall (a costly business), the expense of putting the mission house to rights, and the building of the foundation up to the level of the street. This will cost 1,500l. at least, of which they have got 500l. They purpose to take contracts for a bit at a time, and will go on as they get money—not incurring debt further than is absolutely necessary for the progress of the work. From the level of the street the cost of the chapel will be borne by the benefactress." Mr. G. Street, architect, has furnished designs for a chapel capable of accommodating 150 persons, and Mr. Blake, of Gravesend, is the contractor for the building. The stone was laid on the chalk rock, a few feet below the Mission House, and it was necessary to select an hour when it would be low water. The small available space, and other circumstances also rendered it undesirable that there should be any grand parade and ceremony.

Ely.—The foundation stone of a new chapel for the Ely union-house has been laid. The building, when completed, will be 52 ft. long, and 21 ft. wide inside; the height, 19 ft. to the line of collars of roof. The materials will be white bricks and stone dressings. It will be lighted by eight windows on the sides, and three windows on the east and west ends. All the

windows will have plain stone heads and cills, so as to harmonise with the union building. The roof will be an open-timbered one, covered with slates, and the building will be strengthened by projecting buttresses on each side, and at the angles. The interior of the walls will have courses of red bricks introduced in bands at intervals and above the arches. At the east end will be fixed an altar-rail and communion-table. The chapel will be fitted with seats to hold about 160 persons. The work has been designed by Mr. D. Oldfield, of London, architect, and will be carried out by Messrs. Freeman, of Ely. The cost will be about 400l., provided by voluntary subscriptions.

Alnham.—The Transitional Norman Church, situated at the base of the Cheviot Hills, at the source of the river Aln, and close to the ruined castle of the Umphravilles, has been in a deplorable state of bad repair for many years. It is now to be restored. The sash windows will be removed, and the openings filled with stone-work and glazing in character with one of the ancient round-headed lancets still remaining at the west end of the church. The church will be refloored and supplied with open benches, and otherwise the entire fabric is to be carefully and conservatively restored. The Duke of Northumberland, the Bishop of Durham, the Archdeacon of Lindisfarne, Mr. Ralph Carr, J.P., and the Vicar, the Rev. M. Lazenby, are the principal promoters of the work, all of whom have approved of the architect's designs. Contracts have been entered into during the last week for the work. Mr. F. R. Wilson, of Alnwick, is the architect.

South Penge, Surrey.—A church is about to be erected in this now populous neighbourhood in a district about to be taken from the parish church. Under the auspices of the Archdeacon of Surrey efforts have been made to raise the necessary funds, and the building committee, having determined to proceed forthwith, invited designs from architects in a limited competition for a church to accommodate 1,000 persons. Those submitted by Messrs. Newman & Billing were selected by the committee.

Eastmeon.—The ancient church of the parish of Eastmeon, second largest in Hampshire, has gone through a restoration, and been re-opened. The old roofs have been taken down, and new ones carried up to their original pitch. They are all open. The chancel and transepts are covered with green tinted slates. The south chancel aisle (or lady chapel), south aisle, and nave roofs, have had the old lead recast and relaid. On the old Norman tower a new spire has been erected, and covered with lead, in every way as near as possible to the old one. The work of restoration has been carried out by Mr. Ewan Christian, architect, with Mr. Smith, of Portsea, as contractor. The cost is estimated at upwards of 5,000l.

FROM SCOTLAND.

Edinburgh.—There is in course of erection a new schoolhouse in connexion with St. Patrick's Roman Catholic Church, Cowgate. The building is intended to take the place of the temporary premises put up some twelve or fourteen years ago, but which have been turned into a brewery. The plans, prepared by Mr. R. Anderson, architect, have received the sanction of the Committee of Council on Education. Of the estimated cost (1,600l.), nearly 400l. will be obtained from Government, being at the usual rate of 2s. 6d. per square foot, and the remainder will be raised by voluntary subscription among the members of St. Patrick's congregation. Occupying a vacant piece of ground adjoining the church, the new schoolhouse will be an oblong structure, 86 ft. long by 45 ft. in breadth, covered with a roof of two spans. Internally the building will be divided into two class-rooms, each measuring 77 ft. by 20 ft., with a cloak-room at the end of each; an additional class-room of 24 ft. being provided in a projecting wing thrown out at one corner of the block. Near the top of each gable will be placed a large circular window swung on pivots so that it may be readily opened for purposes of ventilation. The principal light, however, will be obtained from skylights introduced at intervals along the roof. The heating-apparatus intended to be adopted is a modification of a system which has been recommended by the Committee of Council. The fireplace is of the ordinary construction, with the exception that the fire is placed close to the hearth, with a grating below communicating by

pipes, with apertures in the floor of the room. In this way the fire is supplied with air from beneath. The smoke-flue, constructed of iron, is carried up through a hollow space into which fresh air is admitted. The heat of the flue is thus utilised in raising the temperature of the air through which it passes; and this air being allowed to enter the room at a convenient height, serves to supplement the heating effect of the fire. In connexion with this arrangement the removal of vitiated air will be provided for by a shaft running along the ceiling of each room, with wooden flaps at frequent intervals, which may be opened or closed at pleasure, and zinc ventilators giving egress above. A fall which takes place in the ground gives the architect an opportunity of constructing in the basement a large coal-cellar and store-room, with latrines and other conveniences.

Books Received.

Transactions of the Architectural Institute of Scotland, 1868-69: Church dedicated to St. Magnus, Orkney.

BETWEEN 1845 and 1855 Sir Henry Dryden made a large number of measurements and drawings relative to the Cathedral of St. Magnus, at Kirkwall, in Orkney. These Sir Henry has presented to the Architectural Institute of Scotland, and the committee have lithographed a selection from them to form a part of their "Illustrations of Scottish Buildings," issued to members as portion of their "transactions." The building was commenced in the year 1137 by Earl Ronald of Norway, and the earliest part is therefore Norman in style, going off into Early English. All the plates are very elaborately figured,—over-figured, one might almost say,—and have been lithographed with more precision and care than was the case with some other sets of illustrations issued by the same Institute. Sir Henry Dryden has made the members his debtor.

VARIORUM.

"Industrial Employment Association: Fourth Report of the Executive Committee. June, 1870. London: Printed by A. Boot, 8, Eastcheap." This association has been "established for the purpose of preventing pauperism and crime, by rescuing destitute children, and employing 'waste labour on waste land.'" The honorary secretary is Mr. F. Fuller. This fourth report of the executive committee states that "all the circumstances which have transpired in the interval [since the third report] have confirmed and justified the principles of the association, and the conviction of the committee, that in the application of 'waste labour to waste land' lies the efficient and trustworthy remedy for grievous social ills, whilst no other possible policy can operate as an efficient substitute, or avert the pernicious consequences of neglecting it." The statement of receipts and expenditure from the commencement of the society in January, 1869, to June, 1870, shows that 205*l.* odd have been received in donations, and 62*l.* odd in annual subscriptions; and that the expenditure has been 738*l.* odd; including 353*l.* for printing and circulating the reports; 137*l.* for salaries of clerks and travelling agents; 112*l.* for advertising, public meetings, &c.; 108*l.* for rent of offices, &c.—"On the Vernon Dante; with other Dissertations. By H. C. Barlow, M.D., F.G.S., Cav. Mau. Soc. Corris. de' Quirita di Roma, &c. Williams & Norgate, Henrietta-street, Covent-garden." The interest which the English Dantophilist, Dr. Barlow, takes in his hero, Dante, is profound and inexhaustible, and for this alone Dr. Barlow well merits the honour conferred upon him by the King of Italy. The present learned contribution contains much that is of importance in reference to Dante.—"Palestine Exploration Fund. Quarterly Statement No. VI. March 31 to June 30, 1870. London: Society's Office, 9, Pall Mall East." This number contains various interesting papers, especially one on "Inscriptions and Masons' Marks," by Captain Warren. Besides the Statement of Progress, there are also papers on "The Original Discovery of the Moabite Stone," "Expedition to the East of Jordan," by Captain Warren, also his continued Letters, and various others, besides the Report of the Annual Meeting of May 16th.—"A Handy Book of the New Law of Bankruptcy, and Private Arrangements

with Creditors. By W. A. Oliver, Solicitor. Simpkin, Marshall, & Co." This is another manual for the guidance of debtors, creditors, and trustees of bankrupt estates. In an Appendix are the new Acts themselves, with rules and forms.

Miscellaneous.

Jacob's Patent Sewer Ventilator.—Mr. Arthur Jacob, Assoc. Inst. C.E., and engineer to the Bombay Local Board, has lately introduced a new street-ventilator. It is an improvement on a somewhat similar contrivance by him. The essential parts of the apparatus, which is illustrated in the *Engineer*, are, first, the outer frame, which is bedded on a piece of good landing, or even on the brickwork of the man-hole, or inspection shaft. This frame has a circular opening in the centre to receive a perforated double cylinder of galvanised iron or zinc for holding the disinfecting material, which may be either charcoal, carbide of iron, or carbolate of lime. Within this cylinder is fixed another of about a third of the diameter, and both are perforated for so much of the length as remains suspended below the casting. Both cylinders are closed at bottom. The outer cylinder is furnished with a collar, on which it bears, and underneath, between the collar and the casting, there is a washer of india-rubber, to prevent the escape of the foul air otherwise than through the deodorising material when the cylinder is placed in its position. The cap is dropped into its place, and effectually prevents the contents of the cylinder from becoming damp or damaged by rain. The principle of the apparatus is simple. The foul air passes through the perforations of the outer cylinder, then through the detergent material, and so reaches the inside of the smaller cylinder, through the top of which the purified air escapes, and, passing through the openings between the cap and the frame, reaches the surface of the street. There is a syphon outlet at each corner of the outer casting for allowing the escape of rain.

The Tooting Common Case.—The Commons Preservation Society and its clients have had another triumph. The Tooting-Graveney case has been settled in their favour, and the lord of the manor restrained in every essential particular, as well as condemned in costs. A City gentleman bought the rights of the lord of the manor of Tooting-Graveney, an open space between Tooting and Streatham, for 3,000*l.* Those dwelling near did not compete with him, because they understood that the object of the new purchaser was to improve the common for the public good. A stiff fencing, however, was soon put round what had been an open space, and the rumour went round that it was to be treated arbitrarily as freehold and sold or let for building. The public spirit of the neighbourhood was roused. The fencing was removed. Actions and counter-actions were brought. In 1868 a bill was filed by Mr. Betts, for himself and other people having common-rights in Tooting-Graveney; and the decree just pronounced by the Master of the Rolls grants them all they ask. An injunction is granted against the lord of the manor which will prevent his enclosing; while the rights of the commoners to pasture, to cut furze and bushes, and to dig gravel in moderation, are all affirmed. Such results will gradually put an end to illegal encroachments by lords of manors.

Feasts.—We cannot pretend to mention all such events, now so common. On Saturday last the workmen of Messrs. Thorn & Co., the well-known contractors for new Blackfriars Bridge, went to Rosberville Gardens, by Citizen M. boat. Nearly 280 partook of dinner. Amongst the subscribers to the "bean-feast" was Lady Marian Alford, 20*l.* Each man received from the treasurer, Mr. W. Coleman, a dividend of three shillings.—The workmen employed upon the extensive alterations and additions at St. Audries, the seat of Sir A. A. Hood, bart., were invited by their employer, Mr. Henry Davis, of Taunton, to a day's excursion to Minehead, on Tuesday, the 19th inst., to which pleasant watering-place they were conveyed in breaks and omnibuses. After strolling along the beach for some time, the men, together with a few friends connected with the works and estate, sat down to a substantial dinner, provided by Messrs. Fry & Langdon, of Williton. Mr. Griffiths, the clerk of the works, occupied the chair.

The Metropolitan Board of Works.

At the meeting of the Metropolitan Board of Works, on the 22nd inst., Mr. Le Breton said it would be a great public convenience if tramways could be laid down on the Victoria Embankment. He moved that it be referred to the Works Committee to ascertain whether it would not promote public convenience to appropriate a part of the carriageway to tramway, and whether such an appropriation might not be so carried out as to be the means of considerably relieving the parishes from the charges annually required to maintain, cleanse, and light the carriage and foot ways of the embankment. The motion was carried. It was resolved that immediately after the 31st inst. notice be given to the Metropolis Sewage and Emsay Reclamation Company that the 25,000*l.* deposited with the board are absolutely forfeited. Mr. Runtz said the company had failed to carry out the undertaking, and stood in the way of others utilising the sewage. Mr. Shaw urged that other steps be taken against the company. The chairman said other proceedings would be taken, but to declare the deposit forfeited was the first step.

Anticipated Destruction of the Cheese-

wring.—Attention has been drawn more than once to the perilous situation of that remarkable pile of rocks, six or seven miles north of the town of Liskeard, in Cornwall, and known as the Wring-cheese or Cheesewring. Of late years this hill has been so extensively quarried for granite that the workmen are now within a few paces of the Cheesewring itself. When a lease of the ground was first granted, it was stipulated that no stone should be removed within a certain distance of this well-known landmark, so as to prevent any possibility of its being destroyed. Now, however, the boundaries of the quarry have been so extended that powerful blasting operations are continually being carried on within a short distance of it, not without very great risk to the whole structure. In fact, it is on the eve of being destroyed, unless a vigorous and powerful attempt be made to save it.

Sheffield Architectural and Archaeo-

logical Society.—The last of the monthly excursions of the members of this society was to Adel Church and Kirkstall Abbey, near Leeds. A party of ladies and gentlemen left Sheffield by the Midland Railway, and arrived in Leeds about noon. A carriage awaited them at the Leeds Station, in which they drove off to Adel, where they were welcomed by the Rev. George Lewthwaite, and hospitably entertained at luncheon; after which they went to examine the old church, conducted by him, and he gave a clear account of the history and architecture of the whole building. Time pressed for the party to go on to Kirkstall. They arrived at the old abbey about five o'clock, and, after a short paper read by the Rev. J. Stacey, they examined the ruins. Returning to Leeds to tea, the party got home to Sheffield by the train, arriving a little before ten o'clock.

Girls' Industrial Home, Ealing.—The efforts which the committee of the Refuge for Homeless and Destitute Children have for some time been making to provide increased accommodation for destitute orphan and friendless girls were on Saturday crowned with success, by the opening of two new wings which have been added to the home at Ealing, by means of which fifty additional girls can be admitted. The Earl of Shaftesbury presided at the inaugural ceremony. The object of these homes is not the reformation of criminal or vicious children, but to rescue those who are exposed to temptations. An anonymous donor gave 1,000*l.* towards the building fund, but about 1,300*l.* are still required. The operations of the Ealing Home have been carried on since May, 1867. At present there are sixty inmates, a number which now will speedily be increased to upwards of 100.

Government and Inventors.—The Society of Arts have appointed a committee to report whether there is good foundation for the statement that reasonable dissatisfaction exists respecting the manner in which inventions are examined and dealt with by the Government; and, if such be the case, whether any practical remedy can be suggested. They have sent out a number of questions, prepared by the committee, and addressed to those inventors and others who may possess information and are interested in the subject, and they ask for their return by November 1.

The New Locks and Weirs on the Severn.—These works are making progress. They are being carried out by Mr. Alfred Williams, the resident engineer, a son of the engineer, Mr. E. L. Williams, who designed the works. No contractor would undertake them, the cost being limited to 20,000l. All the stone, nearly all the blue bricks, and many of the red bricks are already on the ground; the other material needed is at hand; the men are at work from six in the morning till eight at night on every day of the week save Saturday; and there is not much doubt, it is said, that sufficient progress will have been made by November to allow the traffic to pass, though the other work then remaining will occupy a considerable time. The engineer is confident that the work will be finished within the original low estimate.

Monument to Kepler.—The monument to Kepler at Weidestadt, in Wurtemberg, has been inaugurated, says *Nature*. The statue is of bronze, 10 ft. high, in a sitting posture, his left hand supported on a celestial globe. The four corners of the pedestal are adorned with statues, 5 ft. in height, representing M. Mastling, who taught Kepler mathematics, Copernicus, Tycho Brahe, and Jobst Byrg, the mechanician. On each side of the pedestal are bas-reliefs, representing different circumstances in his life. The monument is the work of the sculptor Kreling, director of the School of Fine Arts at Nuremberg; the statues and bas-reliefs were cast and chiselled in the workshops of MM. Lenz & Herold, in the same town; the pedestal, of red sandstone, from a quarry in the neighbourhood of Weidestadt, was constructed by the architect, Egle, of Stuttgart.

The Legal Status of Building Societies. A deputation, representing, 116,900 members of building societies, having an aggregate capital of 5,000,000l., established in various parts of the metropolis and the country, waited on Mr. Bruce, the Home Secretary, to urge upon the Government the desirableness of passing the Bill now before Parliament, which proposes to deal with their societies this session. It was pointed out to the right hon. gentleman by Mr. T. Hughes, M.P., that under the law, as it at present existed, building societies suffered great inconvenience from being classed together, under the jurisdiction of the registrar, with co-operative, friendly, and other societies, with which they had no connexion.

School of Art, Winchester.—A further advance has been made towards establishing this very desirable addition to the educational appliances already existing in Winchester. At the meeting of the committee, at the house of the president, the Rev. Dr. Ridding, on Thursday, it was decided to abandon the idea of taking premises in the square, but to accept the accommodation offered by Mr. Sheppard, of Wolvesey, at a rent of 20l. for one year, exclusive of fire and gas. Mr. Clarke, a gentleman, who has had charge of a large school in London, was engaged as master of the Winchester school.

The Rowland Hill Statue.—The statue of Rowland Hill, which has been executed by Mr. Peter Hollins, is, by the consent of the Birmingham Exchange Committee, to be placed in the bay of the Exchange Building, until the new post-office is completed. The statue is of a marble which will not bear exposure to the open air. It stands 10 ft. 9 in. in height, including pedestal, upon which there is a bas-relief of a sick girl in bed, receiving a letter from a postman.

The late Mr. E. Baylis, C.E.—We mention with regret the unexpected death of this gentleman, in his 58th year, on the 23rd inst. He had been slightly unwell, but had recovered, when an attack of heart disease suddenly carried him off. Mr. Baylis had travelled considerably in discharge of the duties of his profession. His communications to us from Central America, the West Indies, and other parts, will be remembered by some of our readers. He leaves a widow and large family to lament his loss.

A Bridge on Fire.—The high level bridge at Newcastle has had a narrow escape from destruction. The roadway for vehicles having been under repair, an apparatus for boiling pitch had been left standing on it, when the woodwork in the vicinity took fire. The risk of its spreading was at one moment imminent; but owing to the prompt arrival of the fire-extinguishing apparatus, the danger was averted.

The Government Palace, Lima.—According to *Nature*, the old Palace of Government at Lima, in Peru, is condemned, and a new one, which is to be a stone palace from the designs of M. Zoiles, architect and engineer, is to be built. In preparation, the Ministerial departments have been removed from the old building.

TENDERS.

For painting, &c., at Christ's Hospital:—
Hayward & Son £339 18 0
Pritchard 814 18 0
Patman & Co. 875 0 0
Shaw 854 0 0
Richardson 852 0 0
Morby 815 0 0
Pitman & Outhbertson (accepted) 750 0 0

For house and schools, Reigate. Mr. John Lees, architect:—
Cook £3,230 0 0
Wright, Brothers 3,160 0 0
Nightingale, Brothers 2,834 0 0
Brown 2,700 0 0
Willcocks 2,450 0 0

For pulling down and rebuilding St. James's Tower, Taunton. Mr. Houghton Spencer, architect:—
Manning & Patch £4,540 0 0
Pollard 4,323 0 0
Davis 4,282 0 0
Spiller (accepted) 3,070 0 0

For building a lodge to Henlade House, near Taunton, for Mr. J. E. Anderson. Mr. Houghton Spencer, architect:—
Pollard £540 0 0
Shewbrooks 450 0 0
Davis (accepted) 450 0 0

For altering and enlarging the Taunton and Somerset Hospital. Mr. Houghton Spencer, architect:—
Pollard £2,746 0 0
Dinham & Manning 2,313 1 5
Spiller 2,183 0 0
Finch & Hawkins 2,104 0 0
Fox 2,095 0 0
Giles 1,922 17 6
Moss & Tansell 1,735 12 0
Shewbrooks (accepted) 1,670 0 0
Aplin 1,493 12 0
" (amended tender) 1,513 12 0

For a pair of semi-detached villa residences proposed to be erected on Wandsworth Common, for Messrs. Larner & Watts:—
Tilley £982 0 0
Eaton, Brothers 924 0 0
Ronald 813 0 0
Hearn 810 12 0
Brett 795 0 0
Thornton 669 0 0

For new cockhouse, bakehouse, &c., Maidstone Prisons. Mr. Martin Bulmer, County Surveyor. Quantities by Mr. George Ruck:—
Dowd, Dover, & Co. £1,933 0 0
Vaughan 1,690 0 0
Aard & Abnett 1,590 0 0
Bridge 1,587 0 0
Clements & Wallis 1,560 0 0
Anscomb (accepted) 1,510 0 0

For Police Station, Canterbury, Kent County Constabulary. Mr. Martin Bulmer, County Surveyor. Quantities by Mr. George Ruck:—
Denne, Brothers £2,490 0 0
Richardson 2,484 0 0
Gaskin & Godden 2,480 0 0
Judges 2,470 0 0
Shrubsole 2,448 0 0
Solitt 2,445 0 0
Wilson 2,429 0 0
Naylor 2,390 0 0
Adcock & Rees 2,385 0 0
Epps 2,364 10 6
Cozen, Brothers 2,349 0 0
Matthews (accepted) 2,160 0 0

For addition to Sittingbourne Police Station. Mr. Martin Bulmer, County Surveyor. Quantities by Mr. George Ruck:—
Tozer £220 0 0
Dowd, Dover, & Co. 505 0 0
Solitt 470 0 0
Epps 419 10 0
Shrubsole (accepted) 419 0 0

For three houses and shops at Deptford. Mr. Northcroft, architect:—
Dove, Brothers £2,225 0 0
Shepherd 2,160 0 0
Winship 1,940 0 0
Scott 1,890 0 0
Nutt 1,850 0 0

For the erection of houses and shops at Wandsworth, for Mr. Simpson. Mr. J. Gibson, Architect. Quantities supplied:—
Smith (accepted) £3,984 0 0

For alterations and additions to the Griffin public house, for Mr. Rowell, 4 and 5, Liquorpond-street:—
Bridgman & Co. £727 0 0
Turner & Son 690 0 0
Wearman 680 0 0
Langmead & Way 678 0 0

For pitch pine seats for the West London Synagogue. Messrs. Davis & Emmanuel, architects:—
Myers & Sons £2,450 0 0
Hunier 2,097 0 0
Lascelles 1,660 0 0

For proposed works at Tonbridge Chapel, Keston-road. Mr. G. Judge, jun., architect. Quantities by Messrs. Curtis & Son:—

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Axford 961 0 0
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Palmer & Son £1,664 0 0
Nightingale 1,395 0 0
Pavitt 1,135 0 0
Hoare & Son (accepted) 993 0 0

For Croxley Church, Rickmansworth. Mr. John Norton, architect. Quantities by Mr. Thacker:—
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Wood 2,900 0 0
Nightingale 2,863 0 0
Wall & Hook 2,850 0 0
G. & J. Waterman 2,849 0 0
Diment 2,849 0 0
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Coney & Mann 2,785 0 0
Hookham 2,761 0 0
Bowler 2,674 0 0
Holland 2,271 0 0
Clarke 2,228 13 0

For alterations and repairs at Greville House, Kilburn. Mr. H. Saxon Snell, architect:—
Green & King £716 0 0
Phillips & Baker 680 0 0
Manley & Rogers 674 0 0
Bird 643 0 0
Smith 615 0 0
Howard 595 0 0
Crabbe & Vaughan (too late) 593 0 0

For alterations and additions, 53, Kingsland-road, for Messrs. Fackridge & Nephew. Mr. Joseph Tanner, architect:—
Larke £1,234 0 0
Crabbe & Vaughan 1,175 0 0
Marr 1,121 0 0
Greenwood & Sons 1,115 0 0
Eaton & Chapman 1,070 0 0
Turner & Sons (accepted) 1,040 0 0

For new granary and for alterations to Sunderland Wharf, Bermondsey, for Mr. T. Richards. Mr. George Elkington, architect:—
Wells £2,574 0 0
Tarrant 2,510 0 0
Thomson 2,470 0 0
Little 2,371 0 0
Conder 2,189 0 0
Shepherd (accepted) 2,094 0 0

For the completion of three houses in Park-road North, Acton, W., for Mr. J. C. Taylor. Mr. Edward Monson, jun., architect:—
Rhodes & Roberts £725 10 0
Nightingale 683 0 0
Rankin 680 0 0
Heaver & Coates 645 0 0
Hoare & Cleland 645 0 0
Stocks & Tidey 639 0 0
Hurst 609 0 0
Whiting 599 15 10
Holding & Dickens 550 0 0
Bowler 550 0 0
J. & R. Whittaker 549 0 0
Fanthorpe 547 16 6
Scarlett & Elmer 488 0 0
Warr 476 5 0

Arrived too late.

Harrison & Son 740 0 0
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A MEETING was held at the Mansion House on July 13, when it was unanimously resolved that it was an incumbent duty to complete this great Protestant Cathedral. As the Ecclesiastical Commissioners have left to the Cathedral only a bare sufficiency for carrying on its Services, the only way by which this can be effected is by Voluntary Subscriptions.

The sum of 27,000*l.* and upwards has already been promised, the principal Contributors of which are mentioned in the following list, but the Committee feel it their duty to say that this amount represents but a small portion of the Sum required to render the Cathedral of our Metropolis worthy of the Nation and of the Reformed Religion. They trust that Englishmen, whether living in London or the Country, in England or Abroad, will feel a pride in helping this important work to a triumphant conclusion, and that they will contribute according to their means, whether they be large or small. The Dean of St. Paul's, or the Secretary, W. CALVERT SHONE, Esq. Chapter House, St. Paul's, will gladly receive Contributions.

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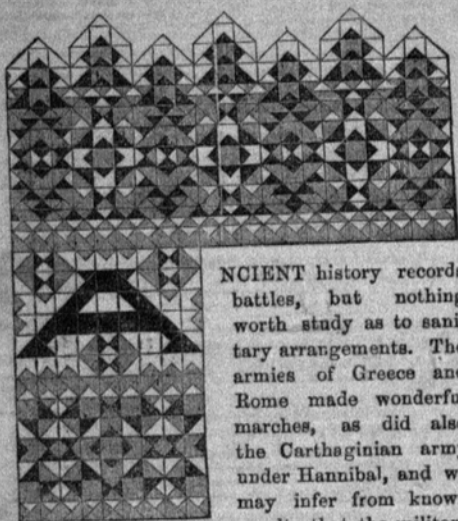
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The Builder.

VOL. XXVIII.—No. 1435.

Sanitary Appliances in Time of War for Troops in the Field, and for the Care of Sick and Wounded.



ANCIENT history records battles, but nothing worth study as to sanitary arrangements. The armies of Greece and Rome made wonderful marches, as did also the Carthaginian army under Hannibal, and we may infer from known results that the military

arrangements must have been more perfect than those for the British army in the Crimea, up to the spring and summer of 1855. We, however, now have a military sanitary history, and so have the states of North America, embodied in printed volumes, containing full details of the works and regulations suggested and carried out. The writers for the daily press do not, however, seem to know anything about these volumes. Sir John Pringle for the army, and Dr. Lind for the navy, about a century ago, also published the results of their experience, and embodied rules for observance in any future wars; but armies continue to take the field without any clearly defined regulations as to sanitary works and appliances. Generals, quartermasters, commissariat officers, and army surgeons are supposed to know all, and to be enabled to do all that is official and necessary. There is a society endeavouring to organise an extra system of relief for the wounded, but their main reliance appears to be centred on nursing, as this was considered to be successful in the Crimea. The sooner it is understood that nursing is a secondary consideration, the better it will be for the sick and wounded soldiers. In all campaigns sickness is the great destroyer of armies, and sickness has been aggravated tenfold by ignorance of the most simple sanitary rules, and by neglect. The British army in the East during the Crimean War suffered fearfully up to the spring of 1855, as did also the French and Sardinian armies to the end of the war. Undue exposure, defective clothing and feeding, killed hundreds of men; but fever and cholera were the terrible scourges, both in camp and in the unregulated hospitals, which only intensified the death-rate. The lady nurses who so nobly entered the hospitals on the Bosphorus had no power over structural arrangements (or malarrangements) and over-crowding, but sank into the mass of misery by which they became surrounded. No person will undervalue their noble, energetic, and efficient labours; but to attribute results not in any way due to those labours will only mislead. The British Government appointed and sent out to the seat of war three sanitary commissioners in the spring of 1855, — Dr. John Sutherland, Mr. Robert Rawlinson, civil engineer, and Dr. Hector

Gavin. These gentlemen landed at Constantinople on the 6th of March (1855), and after reporting themselves to the authorities, at once commenced the work they had been sent out to perform. A Blue-Book Report, drawn up under the directions of the Minister at War, contains the instructions to the commissioners, (prepared by Lord Shaftesbury), the work performed under the directions of the commissioners, and the results. At the end of the Report there is a summary, and instructions for future guidance. In the winter, 1854-1855, the British army in the Crimea suffered a rate of mortality unprecedented in the worst previous wars. During three months, December, January, and February, regiments at the front were reduced, by deaths and sickness, seventy per cent. Sanitary works and regulations were commenced in March (1855); and by the end of the summer the mortality in the hospitals on the Bosphorus was at a less rate than in civil hospitals in England, and the entire British army in the Crimea was in a better state of health than it had ever been in barracks at home in time of peace. Neither the French nor the Sardinian armies knew any such improvements. In the months of May and June (1855) the Sardinian army, as encamped, but without trench duties, lost by cholera about 1 in 15 of the men in the field; or 1,000 out of 15,000; and, during the last three months of the war, the French army lost, from deaths in hospitals, at a rate of 5,000 per month; or, some 15,000 men died in hospitals of types of disease banished from the British hospitals. As was said at the time, "Here was an experiment in sanitary science on the grandest scale worked out for the instruction of the world." Certain benevolent men in the Northern States of America studied the British Sanitary Commissioners' reports, adopted and put into practice the regulations laid down, and, organising an independent sanitary commission for the armies of the North, saved the Union, and enabled the war to be successfully closed. The transactions of this American Sanitary Commission are embodied in a set of reports full of interesting information.

Since the Crimean war, the British Government has organised sanitary committees for both army and navy at home and abroad. Great improvements are shown in the annual reports and returns to have been accomplished, especially in the Indian army. There is a reduced sick-rate for the entire British army to the extent of some 40,000 or 50,000 cases, and a saving of from 2,000 to 3,000 deaths per annum.

War has commenced on the Continent, and it may safely be predicted that powder and shot, sword and bayonet, will only play secondary parts in the destruction of human life, perfect as these new weapons of war for destruction have been made. Tents d'abri, overcrowded hospitals, and bad air resulting from such overcrowding, will be the most deadly arrangements in the campaign.

Exposure to the elements in war is not to be avoided, and there must also be excessive fatigue and great privations, with occasional bad food and tainted water. These contingencies, under any circumstances, would lower the general health, and give epidemic diseases a start; but there may be much of overcrowding and of bad air avoided by very simple means and regulations.

The following brief rules, or rather hints, for the conduct of an army in the field, are offered from experience, and if attended to may be of use to French and Germans alike:—

1. A good supply of water is necessary. All wells and other sources should therefore be put at once under guard to prevent pollution and waste.

2. There should be an organised water service—that is, water-drawers and water-carriers to draw and distribute with order and regularity, and not random drawing, as is usual.

3. For cavalry and artillery horse-watering in camps, if troughs are used, each watering-trough should be filled independently, and the surface should be paved round, or have a covering of broken stone to prevent the ground being worked into mud by the horses' feet and by slopping of water.

4. If surface springs are used, the water should be impounded in a temporary tank to equalize the night flow, and water should only be dipped or drawn by men appointed for the purpose, to prevent its being dirtied or wasted.

5. Each 100 men should have a trench-latrines excavated, a portion of fresh earth being thrown each day over the excreta. A rude seat, side-fence, and shed-roof may, in many cases, easily be provided.

6. For hospital purposes (sick and surgical cases, and especially after an engagement) public buildings, churches, and private houses, will be taken possession of, and will, as a rule, be overcrowded. In summer all the windows may with safety be removed; in autumn and in winter the upper squares of glass may be taken (or broken) out, and in huts and sheds there may be ridge ventilation. Cold is injurious, but overcrowding in foul air is deadly.

7. As much cleanliness as is practicable should be obtained. Surface scavenging may always be accomplished, and surgeons should be instructed to demand the necessary materials and labour, or be empowered to engage and pay any native non-combatants to be obtained in the district, for the purpose of executing sanitary works, and for daily cleansing.

The *Builder* desires to be impartial in offering advice on sanitary regulations. We do not in any degree admire war; we hate it, this war especially: it is a brutal and bloody business under any conditions. The horrors of a battle-field have been only faintly described; no pen can fully record the hideous reality. The greatest amount of human suffering is not, however, on the battle-field, where men are under excitement and delirium, which for the time abstract attention to injury and deaden feeling; but it is afterwards, when the exhausted and shattered frames of the war demon's victims have been removed to some sort of shelter, that the man's real sufferings and misery commence. "The glorious pomp and circumstance of war" cannot be seen in writhing, gasping victims, crowded together amidst filth, given over to death, left to despair.

The sanitarian may be of great use here, and the appliances necessary are simple and easy of execution,—cleanliness, nursing, and fresh air.

That nation which treats its soldiers with the greatest sanitary care (other conditions being tolerably equal) will ultimately be the strongest.

LEICESTER CONGRESS OF THE ARCHEOLOGICAL INSTITUTE.

OLD members of the Institute are not over well satisfied with the recent Congress held in Leicester. There has been plenty of hospitality, but there is not much to look back to in the shape of real work done. We will mention a few of the more prominent papers and events. Lord Talbot de Malahide, the constant friend of the Institute, did his best as president.

At the opening meeting, on the 26th of July, the Mayor, in welcoming the Institute, said,—Some regret, no doubt, would be felt by the members of the Archaeological Institute that there were so few remains of Roman life in Leicester; but they had catholicity enough and philosophy enough to know that under the advancing steps of commercial prosperity, there was every chance that the vestiges of ancient Leicester would be trampled out and obliterated. The factories and warehouses which had arisen in such abundance in the town, and indicated its prosperity, would have concealed from their powerful means of observation and reflection many a vestige of ancient Rome which would have excited and delighted them. They must be contented, however, with the blessings of an advanced civilisation which they enjoyed in this

age of the world, and it was some satisfaction that although they might have lost some of the grandeur, some of the indications of that high refinement which Rome had attained even in the period of her occupation of Leicester, yet that the civilisation of modern Leicester might have been pervaded, as he hoped and believed, by sentiments more humane and more Christian. And he thought, as they were all philosophers, or flattered themselves that they were, they must take that consolation for the loss of many a relic which they would have been proud to exhibit on this occasion.

Lord Talbot de Malahide said the Mayor in his address had alluded to the difficulties which a thriving, flourishing town like Leicester had to contend with in the preservation of its antiquities. He fully admitted this; at the same time, he did not think if persons really felt their value and were anxious to preserve them that the two objects might not be reconciled. It was perfectly possible for a town to follow the line of progress which, of course, was inevitable, and at the same time not to disregard the memorials and the glory of their forefathers. He might also say that there were no individuals or corporate bodies in the country that ought to lay more stress on and feel prouder of those instances in which they could connect themselves with long bygone ages. There were hardly any bodies, hardly any individuals, he might say none that could boast of longer pedigrees than some of the ancient corporations of this country. And although great changes might have taken place in the constitution of corporations and civic bodies, and these of course were inevitable and desirable, yet still they all inherited the glories of the early bodies, and none of them would be anxious to disclaim all connexion with the original founders of the corporations of this country. The corporations, and here he did not draw a narrow distinction between the corporations and those bodies which they represented, had reason to be proud of the career which they had had, and the line which they had taken during the many centuries of English history.

Mr. G. J. Clarke said one of the landed proprietors of that county not only claimed descent in an unbroken line from the founder of the House of Austria, but boasted the far greater honour of his line having given to the world the author of "Tom Jones." Another family claimed descent from the early kings of France, and had given to the English world one of its greatest second-class dramatists. It was not surprising that a county which had given the world a Fielding, a Beaumont, a Herriek, and a Hazlerigg, should be ready to welcome a society that dealt with the past.

After a few words by Mr. Parker on the Town-hall, the meeting broke up, and proceeded to visit Wyggeston's Hospital, the Jewry Hall, All Saints' and St. Margaret's Churches.

At the evening meeting a paper was read by Mr. Jas. Thompson, on "The Jews and the Jewry Wall," from which the following is an extract:—

"The Jewry Wall in this town, which will interest the visitors drawn to Leicester by the Congress of the Institute chiefly as a relic of Roman masonry, has also its claim upon the attention of the antiquarian engineer on other grounds. As its name implies,—a name it has always had in the memory of man, and by which it is known in ancient records,—it was once the quarter in which the Israelites of former times were compelled to reside themselves, owing to the aversion with which they were regarded by our Christian forefathers. The eminent historian of Leicestershire, Nichols, in the first part of his first volume, says truly, 'Whatever may have been the first distinction of these (the Jewry) walls, there can be no doubt but that they were originally of Roman construction; and that the name of Jewry was adopted when that part of Leicester became the peculiar residence of the Jews, who, in all great towns, were customarily limited to a particular district.' The historian goes on to give examples of the usage; as in London, in connexion with the places called *The Jewry*, *Poor Jewry Lane*, and *the Old Jewry*. In Leicester the old fragment of Roman masonry, of which we are speaking,—perhaps in the early Medieval period surrounded by ruins of large Roman structures,—was deemed a refuge which was good enough for the outcasts, and where no Christian would care to intrude.

In the earlier half of the thirteenth century a tide of persecution appears to have set in against the Jews. The treatment of the Israelites in Leicester is indicated in a document or charter, of which a free translation is here rendered, by Simon de Montfort to his burgesses of Leicester:—

"Simon de Montfort, son of Earl Simon de Montfort, Lord of Leicester, to all the faithful in Christ by whom this present document [patent] may be seen or heard. Let it be universally known that I, for the health of my soul, and the souls of my ancestors and successors, have granted and by this my present charter confirmed, for me and my heirs in perpetuity, to my burgesses of Leicester and their heirs, that no Jew or Jewess, in my time or in the time of my heirs, to the end of the world, shall within the liberty of the town of Leicester, inhabit, remain, or obtain any residence. I also wish and command that my heirs after me shall maintain that liberty entire, and shall

guarantee it to the burgesses before named in perpetuity. And in testimony of this I have appended my seal to the present charter. These being witnesses; Sir Aumery de Milton, Sir Walter de Aquila, Sir Roger Blund, chaplain, William Baggett, William de Miravall, and others."

Shortly after the date of this charter, it cannot be doubted all the Jews and Jewesses made their exodus from their ancient quarter in Leicester; though, after the lapse of six centuries, their former home among us still bears its designation.

The Rev. J. G. Joyce, who came strongly to the front during the meeting, read a paper on the well-known glass at Fairford, with reference to the controversy some time since which our readers heard all about.

The Privy Council on Education have ordered a set of drawings to be taken of all the windows, for art purposes, to be deposited, as our readers know, in the South Kensington Museum.

Mr. Joyce said the windows were in a somewhat perilous condition: the lead was decayed in places, and they had sustained injuries from various causes, though they were now carefully preserved. The glass was in pieces unusually long, some pieces being, according to his estimate, 2 ft. by 1 ft. They therefore were the more liable to fractures. Many important parts were wanting, and others were cracked and starred. The local story was that all the glass was at one time buried, to protect it, in the time of the Commonwealth. He then traced the history of the windows. They found them a great celebrity up to 1650; and to a Mr. Holdsworth, who died in 1680, it was said they were chiefly indebted for preservation. Mr. Joyce summarised the various subjects presented in the windows—the Temptation passages in the Life of our Saviour and in that of the Virgin Mary; the Twelve Apostles; the Twelve Prophets; and, lastly, the Judgment Day, which had been treated in an extraordinary manner. It was full of the figures of devils, one of whom was wheeling away to hell a woman in a wheelbarrow. On one of her fingers was the cypher, of the painter, no doubt,—the letter "A," but this was certainly not the cypher of Albert Dürer. He went on to point out that there had always been a certain conventionalism in treating these sacred subjects, which Medieval artists refrained from departing from or tampering with. These conventionalisms had been handed down from age to age, and related to scenes in the life of our Lord, the Virgin Mary, the Apostles, and other matters to which an art tradition attached. He went on to contend that neither the design nor the execution of the glass in the windows in Fairford Church belonged to one person. The characters of the different designs were distinct: some were Flemish in their type, and some more Medieval than others. He instanced the great west window as a work impressed with the strongest Medieval character, as, for instance, in regard to the foot of St. Peter, with its elongated toes, and the naked spindle leg of the woman imploring admission into Paradise, with the great Medieval foot—such a foot as Albert Dürer never could have drawn, even at the age of fourteen. And not only did the designs differ, but the execution of a series of designs differed; the method of using the brush differed; the type of the crocketing differed; and the handwriting of the persons differed.

Mr. Wyre contrasted the character of Albert Dürer's known works with the Fairford windows, in order to show that the latter could not be his handiwork. He especially noticed the nimbi and the drawings of horses. An engraver, whose name was unknown, but whose cypher was "W. A.," was more likely than any artist he knew to be connected with the Fairford glass.

Mr. Clarke questioned the statement about the glass having been buried, and said it appeared to him that this glass took an intermediate position between the old and the modern glass.

On Wednesday morning Mr. Joyce gave a description of the Roman town of *Rato* (Leicester). He stated that it appeared to have been almost, if not quite, in the form of a parallelogram, and in the formation of streets could be traced now pretty nearly where the walls were. They appeared to have ranged nearly north and south, east and west. The Romans constantly seized upon settlements advantageous for position made by the Britons, and on them drew their own lines. In the excavations under his direction at Silchester, the Romans clearly made use of the old British town, a kind of stockade, which was a polygon of nine sides, necessitated by the form of the plateau on which it was situated; and using one line, drew from it streets at right angles. Apparently, at

Leicester, the origin of the walls was a camp actually measured by Roman soldiers. He had not had an opportunity of ascertaining the length of the sides, but believed they would be those given for large camps by Roman writers. *Rato* was entered by gates on four sides, and yesterday they saw the Jewry wall, which he was of opinion was a gateway. The place was directly opposite where there was an ancient bridge that had been more or less an access to the town from the Fosse-way. It was puzzling to find the arches such a height from the ground, because he found that the pavement a little farther down the valley was only about 5 ft. below the street. That floor was undoubtedly the level of the Roman street at that very ancient time. It did not appear to him that the latest condition of the arch of the Jewry wall would require them to go down about 20 ft. There was a great difference in the level of these old towns. At Silchester they had only 5 in. in some places, and in others more than 3 ft. The centre of the Roman town would be in High Cross-street, where it was joined by Blue Boar-lane. When he came to inquire, he found that the whole line of the front of the Roman houses, from the exact point where the street struck, was still underground. The next point was to find the market-place or forum. All Roman life was municipal, and wherever the Romans went they took their old municipal conditions. Therefore there was one considerable central building, which would be the place for shops, and courts of justice. In the forum at Silchester they had the complete lines, as if freshly laid in the earth, probably of the time of Vespasian, of a large parallelogram, 315 ft. long, by 275 ft. wide. Within were public offices, a basilica, and various rooms. It would be interesting if they could recover such a place at Leicester, and the place for such a discovery was at the intersection of the great roads. He found that there had been discovered in Blue Boar-lane certain ranges of pillars in their places. A pair he had sketched were on the line of wall where the forum most likely would be. Between the pillars was a stone lying down, which indicated the flowing of a stream of water between these pillars into the street. These pillars were covered with lead, and he supposed this was through some pigment being applied, which was a precipitate of lead. It might interest them to learn something of the date at which *Rato* was occupied. It appeared that in the mortar of a villa on the Cherry Orchard, was found a coin of Vespasian, which probably showed a near connexion with the reign of that emperor. The town had been particularly prolific in pavements. The figure called *Actæon* was not *Actæon*; it was a male figure standing by a stag. The execution was not very good, and it was probably of the period of Valens or Valentinian. In the museum were some pipes which appeared to have been used for the passage of water or heat, he believed the latter, in connexion with a hypocaust. One fact connected with this city could not fail to interest them; they had it on record that two Christians were martyred in Leicester at the time of Dioclesian.

Archdeacon Trollope explained as to the raising water to supply cities by the Romans, that they appeared to have known and used a kind of force-pump, used like fire-engines by double action.

Mr. Burt, in a paper with reference to Leicester Abbey, observed:—"Those remains are, I believe, in a very unsatisfactory condition to the antiquary. Without going to the question of the 'why' or the 'wherefore' of the great change in the sixteenth century, which ruthlessly swept from the surface of the land the establishments which the piety and the religious feeling of our ancestors had planted on so many a fertile spot, and among such picturesque scenery, the intelligent inquirer into the earlier condition of our country loves to be able to trace the true outlines of such establishments, when wandering among their ruins—to know the exact site of the sacred edifice in which the brethren and sisterhood united in their public prayers and praises to their Creator—to be tolerably certain of the appropriation of the locality to the domestic needs and the social requirements of the institution. Several of the religious orders followed precise rules in these matters, modified, of course, at intervals, and by circumstances. So, one such establishment found fairly complete is a key to all others of the same rule. But the buildings devoted to

the uses of the canons regular of the order of St. Austin, to which Leicester Abbey belonged, followed no such regular plan."

At the evening meeting, after Mr. T. Burgess's paper "On the Battle of Bosworth Field," a member observed that it was commonly believed that the inn which Richard stopped at in Leicester was the Blue Boar.

Mr. Burgess said it was the White Boar, but that after Richard's defeat all the White Boars were changed to Blue Boars. A street called Blue Boar-lane had since been corrupted to "Blubber-lane."

In a conversation which followed the reading of the paper, it was mentioned that the bones of Richard were said to have been thrown into the river over Old Bow Bridge, and that in more modern times, when the water was drawn off, a skeleton was actually found on the spot indicated. It was taken to the Guildhall at Leicester, and much commotion was occasioned by the discovery; but it was clearly proved that these could not have been the bones of Richard, but that they must have been those of a much younger person.

Mr. Burgess mentioned incidentally that a descendant of Sir Simon Digby, the spy in Richard's camp on the eve of the battle, and also a descendant of Catesby, Richard's knight, both lost their lives in the Gunpowder Plot a century or two later.

On Thursday, a party visited the ruined castle and the church of Ashby-de-la-Zouch, and then proceeded to Tutbury and Tamworth, to examine the antiquities in those places. In the evening, a *conversazione*, by invitation of the mayor, Mr. G. Stevenson, was held in the town museum.

At Friday's meeting, the most noticeable paper was that of Dr. Margolouth, who related the continued persecution of the Jews in Mercia (which comprehended seventeen of the English counties), the extortions, the murders, and the persecutions to which they were subjected, chiefly at the instigation of the Christian clergy, and especially in the reign of Henry III. He was of opinion that a Jewish community existed in Leicester at three eras, viz., contemporaneously with the Roman occupation of Leicester, before that period, and during the Norman Conquest. He believed they lived in harmony with the Gentiles until Simon de Montfort issued his sudden edict in 1240 (not 1220, as alleged by others), banishing Jews from Leicester during "the time of his heirs and to the end of the world." In conclusion, he said he saw vestiges of Hebrew extraction in every assembly that he met. Others might think what they pleased, but he considered it an infinitely higher honour to be able to trace one's descent,—be it ever so scantily,—to this sacred race than to the equivocal races of Saxon, Dane, and Norman.

Mr. Holt's paper on "The Leicester Parliament of 1414" was one of considerable interest. The Parliament was ordered by Henry V. to be held in Leicester, and it lasted thirty days. Mr. Holt read some of the old documents convening and proroguing the Parliament.

The great event of Friday was the visit to Beaumanor, and the entertainment given by Mr. and Mrs. Herrick. It is a modern-built residence, but has many historical associations, which were referred to in the course of the afternoon by the present occupant, Mr. Herrick, and other gentlemen. Here, among various relics, is the bed on which Richard III. is said to have slept on the night before the battle of Bosworth Field. It is a massive piece of furniture, with heavy carved head-board and rich heavy scarlet and gold furniture. Mr. Herrick, in exhibiting it to his guests, said it was not pretended that the bed as now equipped was the one used by the hump-backed monarch; but the foundation,—the ground part of it,—was believed to be genuine. He traced its authenticity for between 200 and 300 years, and showed that it was originally in the possession of the Drake family, who formerly occupied the Blue Boar at Leicester (originally the White Boar), where Richard slept when passing through Leicester to Bosworth Field.

Some pleasant speeches were made, and Mr. Nichols (a descendant of the Leicestershire historian), offered some remarks on Beaumanor and its history. The ground on which they stood was originally part of Charnwood Forest. It ceased actually to be a forest in the reign of Henry III., who disafforested it in the eighteenth year of his reign. It was mostly now, by successive acts of inclosure, cultivated like the rest of the country, though part of it was still in its original wild state. He then traced the manor

of Beaumanor from the De Spencers, temp. Edward I., through successive centuries. It then came to the Beaumonts by marriage, and remained in the family down to 1596, when Sir W. Herrick purchased the manor. Leland, in his Itinerary, said, "Then I came to Beaumanor, where there is a pretty lodge, belonging of late to the Beaumonts." The house was represented as standing in a square inclosure, with water all round four sides. From this point, Mr. Nichols continued the history of the place from his grandfather's work,—Nichols's "History of Leicestershire;" the present modern mansion of brick, he added, was built about twenty-five years ago.

The Rev. E. Hill afterwards moved a vote of thanks to Mr. Nichols for his explanations; and Mr. Herrick, in seconding it, said that there was no family that the county of Leicester was so indebted to as the Nichols family, in an archaeological point of view.

In the hall is a remarkable piece of furniture, a large chair cut out of a solid oak tree which was cut down in the park in 1680. Upon it hangs a withered garland with three rosebuds. This is sent annually from Quorndon as a service or chief rent due to the lord of the manor of Beaumanor.

The papers promised for Monday were not sent; but amusement was found, and in the afternoon there was an excursion to Melton Mowbray.

The museum which was established contained an interesting collection, although it did not come up to expectation in respect to the number of portraits of worthies and distinguished persons born in or intimately connected with the counties of Leicester and Rutland, which it was particularly desired should be got together. There were, however, a few notable works of art of this class: a portrait in oil, perhaps by Holbein, of Lord Berners; also portraits of Prince Arthur, eldest son of Henry VII., by Mabuse; Sir W. Eyricke, knt., who represented Leicester in 1601-29; Prince Rupert; Henry, Earl of Westmoreland; Admiral Galway, one of the earliest works of Sir Joshua Reynolds; and three portraits called Wycliffe, but all imaginary.

ROYAL ACADEMY STUDENTS.

EVERYBODY knows that there are now, and are likely to be, but forty academicians, some thirty or more associates, and a few engravers; that these numbers constitute the whole of the practical and working body of the Royal Academy, and have done so ever since the foundation of the Academy, now 100 years ago. What was enough in the days of Sir Joshua Reynolds and in the reign of George III. is considered sufficient in the reign of Queen Victoria, when the number of practising artists is ten times what it then was. But our present business is simply with (what the Commission, in their report, have altogether forgotten) the class of "Students."

We do not wonder that, in the importance and magnitude of this inquiry, the Academy student, or even the mention of his name, should have been so altogether forgotten; for no man can, by any possibility, realise the condition of a "student" of the Academy unless he has himself been one.

Although we cannot wonder at this, still the public, or at any rate the art public, will feel inclined to ask how it is that, considering the ranks of the Academicians are always eventually filled up from the student class, this vital element of the Academy, its young life, has not met with its due share of regard and help. We may try to explain this mystery. What is an Academy student? And in what light is he regarded by those to whom he looks as his masters in art, and whom he is to succeed? These are the most important questions that can now be asked; for just so far as they shall be fairly and kindly answered must be the future of fine-art progress in England. Shall the Academy be really reformed and changed, or remain for ever as it is? What especially makes the first question of such moment is this, that a student of the Academy is altogether different from all other species of students; he is always a volunteer, and joins the ranks of the Academy from simple art instinct, and a sort of natural incapability of applying himself to any other vocation but art. Accident, mere liking, future prospects, the wealth of friends, a good opening, or a hundred other influences, may incite a medical or clerical student to take to his calling;

but nothing save strong instinct and love of art for its own sake, can or does take a youth or young man into the schools of the Royal Academy. So stern a law is this that it would seem to be the only vocation into which it is absolutely impossible for mere wealth of friends to force any one. There is no power by which it is possible to improve art capacity. No man can be taught to paint without a certain natural capacity for painting. Practice adds to the power, but cannot create it. The Royal Academy contains within its body the best and highest art-faculty which the country and time produce. If the Academy fails to produce noble work, we are all quite sure that it cannot be obtained at all. The time fails to produce the mental power asked for. These students are volunteers coming up from all quarters, not from force or persuasion, but because they like the work, and cannot help volunteering into it. There is nothing in modern life at all equal to this in force, intensity of purpose, noble daring in defying difficulties, and risking all in the pursuit of a doubtful future. This consideration, if nothing else, should have led the Academicians Council to a kindly thought about the "Students of the Royal Academy." They have considered academicians and associates, and engravers and foreign artists, and even artist workmen, but have forgotten, strangely enough, the very men who will and must succeed themselves, if the institution is to continue its existence. Possibly the Commission, not consisting of artists, have simply not known what questions to ask, and perhaps did not know that there exists such a body in connexion with the Academy, or those who were examined considered the subject as unworthy of notice or regard, and so did not lead to the subject, and thus come to a fair and full inquiry.

No one can at all comprehend the position of a student of the Academy, except those whose fortune it has been to have joined the ranks themselves. We do not say that the Academy treats its student class with active contempt, or hate, or scorn, or that it desires to be rid of it. It simply is cognizant of its existence, and that is all. What is done for the student cannot be helped: it is part of the regular routine of the institution. Like the opening and shutting of its doors, it is a necessary process, but altogether unnoticeable, and a matter about which no one need or does ask a question or give a thought. Nothing can indicate the state of art feeling more than this: it shows how very little of real and living influential force it has. The academicians command respect, from the fact of his being one of so august and exclusive a body, not because he is one of nature's artists, for in so far he is one with the student, and a brother craftsman. The student meets with no respect at all, in spite of his like vocation, for he is not, and may never be, an academician. Who can wonder at the low social position of the artist, and that when a new art society springs into existence without the artificial help of the Academy, it is rather an existence by sufferance than anything else?

We would not be supposed to be unconscious of the debt owing by the student for the help given to him by the Royal Academy. We do not know how the student can well be too thankful for the help afforded by the Academy. For it, gratitude only can be his best feeling. Long before the existence of any of the multitude of art societies now everywhere to be found, before the Institute of Architects had an existence, or the water-colour societies, or archaeological societies, or any of them, the Royal Academy opened its doors to the student—which, by the way, these have never condescended to do,—and in it he found a room to study in and models to study from. The student must ever thank the Academy for what it has done. Had it not been for the British Museum and the Academy, we do not know what the then race of art-students could have done or where means of study could have been come at. It is therefore not to pick out blemishes, but in the hope of making things better, that we have ventured on these remarks, and because we feel sure that the subject has only to be thought about a little to be fairly looked at and made better. Who will believe it when they are told that all studentships end in seven years, so that a man at twenty considered fit for the honour and advantages of studentship—for which he must offer fair and sufficient proofs—after seven years' further practice and increased power then ceases to be a student, and is of course denied the advantages flowing from it, and that perhaps in

some cases just when he needs them most. What a reform that would have been, and yet will be, to urge "life studentships." It is sometimes said that the greatest men remain *always* learners. We think every student entering the Academy after fair trial should retain his privileges during the whole of his art life. We think, too, that looking at what the students—some of them, at least—*must* in course of time come to, academicians, a limited number should be selected from the whole body of students—those who contribute to the annual exhibition; and these form a student class immediately under the class of associates: this would be to acknowledge the existence and honour of the studentship. Why the number forty was fixed on for the academicians, and still retained, it would be difficult to say, but it certainly seems somewhat strange that forty should have been few enough in Reynolds's day, and that but forty now should be considered sufficient to fill up every want, and exhaust the artistic power of the time and country. But all reforms must commence slowly to last; so let us be satisfied. Forty academicians, the apex of art, and an indefinite number of *life* students, the basis of art. What a change this would in time create in the annual Academy show!

We could say much on what the Royal Academy have to do to make this great institution what it ought to be; the way through which the public should be invited to acknowledge the high value of art and the dignity of artists; and how the Academy must more and more rely on artistic strength, and less on mere social considerations. A great artist needs no social or artificial rank, and seems to lose so much of his artistic strength as his artificial titles are added to. The greater and mightier the artistic power, the less would it seem to endure of artificial and sham elevation, touching, as such does, only the mere wondering crowd of people who are blind to realities. There is a good deal more to think about, and of a very different kind to anything which appears in the report on the Royal Academy by its Royal Commission.

THE ORGANISATION OF LABOUR.

It is a matter of the utmost importance to investigate how far new conditions of national life may be slowly but surely developing among us, and what will, sooner or later, be the result of those changed conditions.

There can be no doubt that the present century has witnessed a change in this respect, of which, in its magnitude, no precedent exists in human history. European society, as it re-formed after the irruption of the barbarian tribes, settled down into certain great classes, the existence of which is tacitly contemplated by most existing institutions. There was the noble class, on which, at one time, the hope of the world depended—a class which now nowhere exists, in its original form of at once caste and aristocracy. In France and in Germany, where the principle of caste is still kept up by the exclusive marriages of the noblesse, power altogether, and wealth to a great extent, have been lost by the old families. In this country, where wealth and its consequent power are open to all, and where the army, the bar, and the church each gives access to the House of Peers, the nobles are no longer a caste; they can hardly be called even a distinct class.

To the old noblesse of the sword, and the later nobility of the Robe, European society of the eighteenth century added the Church, the trade element (which was already the decomposition of the old municipalities), and the peasant population. Each of these classes is visible in this country; the peasants being, of all, the most unchanged.

But the innovation and the perfection of the steam engine have called into existence a class of men unknown to earlier history. The artisans are the army of steam. Gathering in large masses,—increasing, at times, with sudden and enormous rapidity,—educated with an education peculiar to themselves,—embracing within their ranks men who easily earn high remuneration, and men who, by long and patient toil, can hardly keep body and soul together,—subject to great fluctuations of activity, over which they have no control, in which slackness of work means starvation, uniting often the hardships endured by the peasant, with the discomfort and want of health peculiar to the residents in towns,—the class of artisans is one which must exert an immense influence on the future of Europe.

It is important to bear in mind the broad line that separates the artisan from the tradesman. Among men who buy and sell, from the princely merchant to the village huxter, there is a certain amount of fellowship. But the shopkeeper is, at times, almost the natural enemy of the operative. The gains of the former, which on certain occasions he knows how to increase according to opportunity,—that is, in proportion to the need of his customers,—are often looked on with evil eyes by the latter. That most nefarious alliance of capital and of oppression, known as the truck system or "the shop," a system far easier to legislate against than to suppress, is simply an organised robbery of the workman; and, in point of fact, the state of tension existing between the operative and the small tradesman is, at least in many cases, more marked than is that between any other grades in the social scale.

To go fully into the subject demands both space and time. One or two facts alone may give some idea of its importance. In the United Kingdom there are ninety towns, each of which contains more than 20,000 inhabitants. London, as our readers are aware, contains upwards of three millions of residents. If we add to the population of London that of the fourteen largest towns in England, we very nearly double that large total. If we throw in Dublin and Belfast, we find these northern centres of city life to contain very nearly one third of the number of the inhabitants of England, and considerably more than a fifth of that of the United Kingdom. For the due representation, ordering, and organisation of this powerful, intelligent, and laborious army, the host on whose efforts depends not only the primacy of England in Europe, but her maintenance in the number of the Great Powers of the world,—what has been effected by the statesmen, politicians, and public writers of the day?

The necessity of the organisation of this great army of industry has been so urgent, that it has produced a series of internal associations, of which we cannot at present speak. But it is our firm conviction that the state, and permanent welfare, of the country demands that the careful thought of the statesman should be directed to this great element of the history of the future. If the only relation between the State, and the operative classes, be that established by the rude process of counting noses or canvassing for votes; if there exist none of the organisation which binds together society in its classes and grades, in default of which, the tie that holds the individuals in a mass may at any time be rudely rent asunder; a great source of danger lies in the increase of our manufacturing population. On the England of the future, this large and new class of citizens must exert an immense influence, for good or for evil. And yet, so far is this actual problem from being even in the course of solution, that we look in vain for the writer, or the speaker, who has yet submitted it to the attention of the age in its naked and gigantic magnitude.

To recapitulate: the main truth which it is essential to bear in mind, is this. The stability of the institutions of a country, in time of trial, and the permanent culture of all the citizens, depend to a great extent upon the organisation of the several classes of the community. To form an organic whole, the members of society must first form organised parts; and must have not only an individual, but a social, tie to the State. A vast and powerful class is rapidly growing up among us which has no traditional organisation, owing to the comparatively recent date of its origin. In instinctive self-defence, different sections of this great class have thrown themselves into associations, the object of which too often has been rather to equalise the rate of wages, than either to encourage the best workmen, to increase the demand for the production of the trade, or to unite as closely as possible the provider of money with the provider of labour. An organisation that shall be co-operative in the highest sense of the word; that shall stimulate demand by increasing both the cheapness and the excellence of supply; that shall insure to the ablest and most industrious workmen their proper grade among their fellows; that shall bind together employer and employed, in one common bond of enlightened self-interest; and that, originated as an industrial movement, shall result in a patriotic union such as will strengthen the very sinews of the country,—this, in our view, is the great want of the day. Nor do we think it to be a want which, if boldly and honestly regarded, England will long suffer

to remain unsupplied. Let those who are in a position to aid the workman by their counsel meet him on the ground of practical utility. Let them discard political theory. Let them cease to expect everything from artificial legislative changes. Let each trade regard its own true welfare as a whole, and then we shall find every trade to unite in advancing the common welfare of the working classes, and thus the permanent safety and happiness of the whole social structure of the country.

A WORD ON THE WAR.

We have received a pile of maps purporting to show the theatre of the present infamous war; but they are mostly incomplete and bad. The best of them are from Mr. Wyld and Messrs. Bacon & Co., to whom, therefore, we refer such of our readers as desire to be able to follow the progress of the belligerents. We must say a dozen words on the general question. In consequence of the war, bridges are being destroyed, railways dismantled, telegraphic communication stopped; the proposed Holbein Exhibition in Dresden is postponed; and the abandonment for the present of our own International Exhibition of 1871 is on the cards. Property has been depreciated to an immense extent, and hundreds of persons in Germany, France, and England were ruined before a single gun was fired. What destruction, desolation, and misery will be produced before the last gun be heard, who can calculate? And all for what? To advance the designs of a few bad rulers. Every honest man who can write, every man who can command a press, should feel bound to protest with indignation against this scandalous war. If two men quarrel in the street, and would fight it out, the policeman interferes, and the magistrate properly reproves even the attacked for taking the law into his own hands. Why should it be otherwise with nations? If the rulers of life and death feel affronted, or, that their private ends may so be answered, hundreds of thousands of men are set to slay each other. Where is our boasted civilisation? What have the ministers of peace done? If the conspirators at the head of the present war do not at once agree on some mutual scheme of plunder, and operations go on for a month, it is a moderate estimate to say that 50,000 men will be slain or wounded, and that half as many women and children will be left desolate and starving; and when that has been done, a scheme of plunder on the part of one of the sovereign rulers will have to be assented to on the part of the other sovereign ruler. It is too dreadful and too abominable to contemplate calmly. A deep debt of thankfulness is owing to the *Times*. There is little doubt that if the Secret Treaty had not been published as it was, the two conspiring monarchs would, by this time, have been working harmoniously their wicked will in the face of comparatively unarmed Europe. What may yet follow it is scarcely possible to say; but if England be drawn into the strife, it will be in aid of the weak, in support of the right, and to fulfil solemn obligations. Let the punishment fall on those who force her to it.

INVASION WAR! Foul curse of this fair Earth!
Must we once more bow down beneath thy sway?
Must once more lay our dear-bought Peace away,
And give to Rapine and to Crime free birth?
Thy proudest triumphs are but little worth,
Weighed 'gainst the noble lives with which we pay;
For though far off thy with'ring footstep stray,
Thy shadow falls on us and blights our hearth.
Will Heaven forgive such outrage of its laws?
"He who sheds blood, his own blood shall be shed."
What though just vengeance seem awhile to pause,
'Twill surely fall in judgment on the head
Of him who ruthlessly unchains thy jaws,
And lets thee loose with all thy hell-bound dread.

NORTHERN NOOKS: CULROSS.

WHILE speaking some weeks ago with regard to the ancient castle and village of Doune, in Perthshire, we pointed out the fact that it is getting excessively difficult for the poor artist or antiquary to find secluded and pleasant objects of study. The pilgrimages we make nowadays by railway are all getting somehow or other to be as rapid and commonplace as it is possible for railway tourists and excursionists to make them. Most of our large towns are well known, and have been minutely described even in such channels as our own columns; and as to our great feudal or ecclesiastical buildings, they have been studied, criticised, and delineated until every feature has been brought within easy

access of the library table or the portfolio. Still, it is possible with some care and research to discover now and then a picturesque nook lying in some unfrequented thoroughfare or forgotten by a path; and one of the most interesting of such places which we have come across for some time is the ancient and royal burgh of Culross, situated within a few miles of Dunfermline, on the northern shore of the Firth of Forth.

There are few spots, in our opinion, within a day's journey of Edinburgh better worthy of a visit than this ancient and picturesque town, and there are few, we believe, so little known. One reason for this, perhaps, is that Culross is one of those unfortunate places which have been thrown into the background by the development of the railway system. In the good old coaching times, the mail between Dunfermline and Glasgow passed daily within a few hundred yards of it; now its nearest point of contact with the route of the traveller is at East Grange Station on the Stirling and Dunfermline Railway, fully three miles off. The town, as we have said, lies on the northern shore of the Firth of Forth, but the receding tide leaves so wide a breadth of shallow and muddy beach that direct communication with the river steamers which ply between Granton and Stirling is generally a thing to be avoided; and passengers by water must perforce disembark either at Crombie Point or at Kin-cardine, each as far from the village as the railway station is. But though thus somewhat difficult of access, Culross, when reached, will be found amply to repay the toils of the pilgrimage; and even to recompense the pilgrim for a walk over some very sludgy and miry country roads. We do not understand how it should be that the roads in this district are in such bad repair. The great apostle of road reforms in Scotland (Mr. Pagan), who was a native of the neighbouring kingdom of Fife, would certainly not have tolerated them for a moment. There is an obvious and most perceptible want of macadamisation over most of these roadways.

As you approach Culross it is seen at once to possess a curious and venerable appearance; besides having at the same time much natural beauty in its surroundings. It is sheltered on the north and east by a crescent of wooded eminences, and appears to lie embosomed among rich plantations and blooming orchards. The little town, in fact, nestles snugly on a gentle declivity, lying open to the sunny south, its antique dwelling-houses straggling upwards from the water-side to the hill-top, from which the venerable abbey and palatial mansion of the old Earls of Kincardine seem to look down on the placid scene as the civil and ecclesiastical authorities of the place. Few old towns retain so many of the picturesque features of the past; and there is a remarkable air of repose about Culross, greatly owing, no doubt, to its quiet and isolated situation, which is infinitely refreshing to the poor way-worn traveller in these days of turmoil and excitement. In the narrow winding streets there are to be met with not a few bits of quaint domestic architecture, testifying that the knights and burghers of two or three centuries ago must have been men of taste as well as substance, and must have known how to take advantage of the fine natural acclivities of their town. Something of this, no doubt, was owing to the refining influences of the great ecclesiastical foundation to which the old burgh owed its origin. For example, we looked at a curious old-fashioned house, built by Sir George Bruce, of Kinross, about the close of the sixteenth century, which contains a spacious room, with a nicely-pannelled roof, each panel decorated by a painting of one of the virtues, together with certain appropriate inscriptions in Latin and English. The neighbouring castle of Blair will also afford indications that the spirit has not died out in their descendants.

The antiquity of the town is, of course, very great, and it has played an important part in the ecclesiastical history of the country. So far back as the sixth century, Culross (a name which some authors hold signifies literally "the wooded ridge or promontory") was chosen by St. Servanus, the great evangeliser of the southern Picts, as the head-quarters of his missionary labours. Here, too, St. Kentigern, the child of the Princess Thennan or Thenock, when driven with his mother from the court of her father, Loth, the heathen King of the Lothians, was received, as the monkish historians tell us, by St. Serf, and brought up as his adopted son, until the period when he went forth to preach the Gospel to the Britons of Strathclyde. Six centuries later, a beautiful abbey, bearing the name

of Serf, or Servanus, was reared on the hill where the primitive oratory of the saint had stood, the Thane of Fife, whose castle crowned an adjacent eminence, being the founder. The site of this castle is still pointed out on the wooded eminence of Dunimarle, which overhangs the Forth, about half a mile to the west of Culross. Here tradition fixes the scene of the murder of Lady Macduff and her children, by command of the usurper Macbeth, as described in Shakespeare's tragedy of that name; but, of course, our recent and exact topographical and historical researches on this subject somewhat discountenance the truth of the tradition in many points. The hamlet which eventually rose under the shadow of the monastery gradually increased until, in the reign of James IV., it was created a burgh of barony, the dignity of royal burgh being subsequently conferred by charter from James VI.

The remains of the ancient abbey are still a prominent and picturesque feature in the landscape. It was founded, to be more particular, A.D. 1217, by Malcolm, Earl, or Thane, of Fife; and was first inhabited by an order of Cistercian monks. The choir, which was originally of Early English type, has been modernised, and, of course, somewhat damaged. But long anterior to the foundation of the abbey, Culross had, as we have seen, arrived at a high pitch of ecclesiastical repute; and it is a well-ascertained fact that the celebrated St. Kentigern, who was born and educated here in the sixth century, was otherwise that same St. Mungo who is still regarded as the tutelary saint of Glasgow, and who founded its cathedral. A faint and very gentle, but distinct *rapprochement*, with its ancient ecclesiastical character, still hovers about, as it were, in the surrounding atmosphere. Even when the abbey had fallen into disuse; even after the feudal barons, who descended from King Robert the Bruce, who came in place of the monks, had developed the great natural resources of the district, and made the industries of Culross in coal and iron famous throughout the kingdom, it still clung to its ancient traditions. The town is now little more than a shadow of its former self; but it is not a little remarkable, that in spite of the lapse of time, and the many violent changes, civil and ecclesiastical, which have intervened, the name of St. Serf is still held in grateful and loving remembrance by its inhabitants, just as that of the sainted Queen Margaret is in the neighbouring town of Dunfermline.

Culross, we have indicated, had other qualities to recommend it than its ancient ecclesiastical character. It was, at one time, celebrated for its iron manufacture, particularly of girdles for firing the oat-cakes of the country—those round iron plates which Froisart, it will be remembered, described as part of the regular accoutrements of the Scottish light irregular cavalry, who made such tremendous havoc in their marauding expeditions into England. The girdle is still largely employed by the Scottish peasantry, of course; but the seat of the manufacture is no longer at Culross. This curious historical circumstance, which we quote from Murray's "Handbook," is referred to by Sir Walter Scott, in his novel of "The Heart of Midlothian," where the fact seems to be admitted that the hammer-men of Culross were superior handicraftsmen to the hammer-men of Edinburgh. In this respect, the Scottish town seems to have resembled the Mediaeval German cities, specimens of whose ironwork we have frequently engraved in our pages.

What we have space to add partakes of a more modern and contemporary character. The ancient Dunimarle (now called Castle-hill) is said, as we have observed, to occupy the site of Kennaway Castle, where Lady Macduff and her children were so ruthlessly sacrificed. It is certainly a splendid site, and surrounded with many natural advantages. The present liberal and enlightened lady who succeeded to the property some thirty years ago, —Mrs. Sharpe Erskine (of the Erskines of Torrie), has made extensive alterations and improvements about the mansion-house and grounds. The former, a rather heavy eighteenth-century building, has been largely added to in the English castellated style, in harmony with which it is intended that the remaining part of the house shall be entirely rebuilt. The grounds have been laid out with taste, advantage having been taken of their fine natural situation to form a broad terrace with embattled and turreted wall, which, with the towers of the castle at its western extremity, forms a most conspicuous object as seen from the Firth. On a gentle declivity to the south of this terrace a

new Episcopal chapel is now being built at the sole cost of Mrs. Sharpe Erskine. This edifice, which is intended to bear the name of St. Serf, has been designed by Mr. R. Anderson, architect, of Edinburgh. The style of architecture adopted is that of the Transition (end of the twelfth century), being the style exemplified in the earliest remaining parts of Culross Abbey. The building is intended to serve as a mortuary chapel for the foundress, as well as a place of worship for the Episcopalian families of the neighbourhood.

It is of oblong shape, measuring internally 66 ft. by 18 ft. The east end is apsidal, and the west gable is surmounted by a massive bellry, having two tiers of openings for a peal of three bells. This gable is strongly buttressed, and has a large circular window filled with rich tracery. The entrance to the chapel is on the south side near the west end. It is a large projecting doorway of three orders, the jamb shafts detached, and the orders of the arch richly moulded. The apse is lighted by five single-light windows, the semicircle internally being richly arcaded. The chancel has a two-light window on the south, and an archway on the north side for the organ. From the organ recess access is given to a small vestry. The nave is lighted by five single-light windows on each side. The whole of the chapel is vaulted internally with wood. The church will be fitted up in the usual manner for the clergy and choir, and the nave will be furnished with open deal benches for a congregation of about eighty.

We have only room to add, in conclusion, that we are indebted for some of these details to a well-written article which appeared some months ago in the *Scotsman*, and any one who wishes to know more about this curious northern nook, will find some graphic notes in *Land and Water*, from the pen of Mr. J. E. Bertram.

COLOUR AND ARCHITECTURE.

THE following correspondence will be read with interest:—

The church decorator is now becoming a special trade with us, as the church embroiderer is in Italy. You are aware how many operations are going on about London even, to touch up churches with colour, whether Gothic, Greek, or Roman. I send you a letter on this subject, recently received from Mr. Edmund Sharpe. The question of colour, as applied to architecture, has now so great influence, that the opinion of so good an authority in Mediaeval art as Mr. Sharpe will be read, I have no doubt, with interest, even by those who entertain opposite judgments upon the matter. A full argument upon the subject is now of the greater consequence, as so large a sum as a quarter of a million has been suggested to be expended upon St. Paul's Cathedral, London, and it will depend upon the mode in which these decorations will be applied, whether the application of so considerable a sum on purely superficial decoration can be justified. Splendour must be toned down by sobriety, and no attempt made to vie with the drawing-room or the theatre. I presume that the model exhibited at the Mansion-house will be materially modified; that religious historical painting by men of the highest talent will be more largely introduced, not of subjects tending to superstitious adoration. It may be a question whether a canopy at the east end be doctrinally appropriate in a Protestant, as it is in a Roman Catholic, place of worship; for in the former a movable table is used for the Holy Communion, in the latter an altar for the mass. And are the right men on the working committee, or may it not too largely consist of the amateur and fancy decorator?

T. L. D.

MY DEAR DONALDSON,—I am obliged often to do things by snatches; and thus, in returning from abroad after a six months' absence, I find a heap of transactions of the Institute of Architects for the past six months to scan over. Amongst these I find a discussion in March, on a paper by the Rev. E. L. Cutts, on "The Introduction of Colour in Churches;" and you will not, I know, think it a presumption on my part if I offer my entire adhesion to all that you uttered on that occasion. This rage for colour in our churches is likely to lead to a reversion of the true principles of art as applied to building; for the members of this new school, instead of the members of the old school, painting the handmaid making, as they profess, painting the handmaid of architecture, would really make architecture of painting—they would, in fact, disinherit the elder sister, and make colour predominant over form.

I hold, on the contrary, in architectural art the maxim that whenever the effect of colouring is to attract the eye more than the form of the design, colour is an impertinence. Thus, in Ely Cathedral some one has in this way impudently coloured the boards and rafters of the roof of the

triforium of the choir, in crude, gaudy colours—blue, chocolate, red, and yellow,—the whole covered with white stars, in so obtrusive a manner that it is impossible for the eye to rest on the elegant stonework of Bishop Northwold's charming design, in its native cream-coloured modesty, to which this tawdry work, as seen from below, forms the disturbing background.

If any one desires to see how it is possible, without displacing a stone of the original building, to take out of our old minsters every particle of that grand and solemn effect which is their principal characteristic, if not their greatest merit, let him go down to Winchester, and see in the neighbouring church of St. Cross what an art, which is lower than that of sign-painting, has done to disfigure that grand old building.

If you wish effectually to take all light and shade out of a moulded arch, you have only to paint it. All the glorious effects produced by a flood of sunshine on the rich series of mouldings that clothe and charm the pier-arches of our English cathedrals, are irremediably lost the moment they are painted; the delicate transition from light to dark, on a rounded projection; the sharp line of bright light carried along the bordering fillet, and the dark shadow by means of which the deep adjoining hollow throws the two former into high relief, are altogether lost in a painted arch. The delicate natural play of light and shade designed for, and realised in, the original stonework, is neutralised and absorbed in the painted coat.

The relief produced, such as it is, is artificial, forced, false, and monotonous. And yet this is the condition to which the new school would reduce the noblest buildings in the land, if the guardians of those national treasure-houses would let them have their way. There is a consolation, however, in the thought that, inasmuch as this new rage, the promptings of which are of the same nature, and rise to no higher level than that which formerly led the town barber and the landlord of "The Chequers" to adopt the same gaudy expedient for attracting their customers, will soon pass away.

It is only necessary that a new fashion, whether of dress or building, which is not solidly based on true principles of art or utility, should become sufficiently common in order to cause it to fall into disfavour; and the extent to which the owners of modern Alhambras, tea-gardens, dancing-rooms, and other places of entertainment are following in the wake of their clerical pioneers in the use of gaudy colours, and in the gratification of vulgar taste, will soon bring this sort of meretricious decoration into discredit. Is it too much to prophesy that the next half-century will see our future church restorers as busily engaged in denuding our churches of the unsightly coats of false paint with which we are now loading them, as we ourselves have been in the first part of the century, in stripping them of the conservative whitewash, with which our forefathers in their ignorance considerably covered them up, and so preserved them for us. It is, I know, much easier and a much pleasanter thing to sail with the tide, and to turn with the tide, than to oppose vigorously at the right moment a popular error. I believe, however, that the middle classes in the country are possessed of more common sense and good taste in matters of art, as well as in matters of practical utility, than they usually get credit for, and we have only to appeal to that characteristic sentiment of national sobriety in matters of taste as well as in matters of religious feeling, which distinguishes us from all other nations of Europe; we have only in fact to appeal from Philip in his cups to Philip sober, to insure the banishment of the colour-pot and gold-leaf to those situations and to those regions where they will offend neither the one nor the other.

EDMUND SHARPE.

Ironwork in the Crystal Palace.—Messrs. E. & F. Crook wish it mentioned that the wrought-iron lily to which we lately referred was produced by them. They add,—“The intention of the work is an ornament for the top of a wood cover to a font. The article, as you stated, represents a full-grown, large white lily, with a complement of flowers and buds: the stem of the plant being fully supplied with side leaves in various forms and stages of growth. The base on which the flower stands is also of wrought-iron; the ornaments upon the scrolls are chiselled out of the solid, leaving the outlines and fibrils of the leaves sharp.”

THE SEWAGE QUESTION.

Maidstone.—The Local Board have unanimously decided to carry out the drainage of the Kingsley Estate and the West Borough, at a cost of about 5,000*l*. The Board, it seems, have already power to borrow the requisite amount, so that the works can be proceeded with at once.

Doncaster.—The Corporation are threatened with an injunction by the River Don Navigation Company, if they continue to cast the town's sewage into the river, and a conference has been held at the Mansion House between certain of the directors and a Committee of the Council, as to the best method of carrying the sewage forward to the Corporation estate of Sandall, and there applying it to the irrigation of the land.

Leamington.—Messrs. Oschreane, Grove, & Co., of the Phoenix Works, Wolverhampton, have received the contract for the supply of cast-iron mains for the new sewage irrigation works. It is estimated that 640 tons of straight, and 14 tons of irregular, pipes will be required. The contract prices are 4*l*. 17*s*. 6*d*. for the former, and 9*l*. for the latter.

Northampton.—In the case of Harrold v. Markham, which came before Vice-Chancellor Bacon, on Thursday, evidence was given as to the mode of disposing of sewage. The authorities on the subject appear generally to have advocated sewage farms where the sewage matter is used for the purpose of irrigation. The advocates of this plan contend that the liquid which reaches a stream, after passing through the earth for any distance, is, by the natural filtration of the soil, entirely freed from any noxious particles of organic matter. On the other hand, it is objected that in the irrigation system the sewage matter has to be spread over a considerable area of land, and necessarily constitutes an offensive and fever-causing nuisance in the neighbourhood, which, however, is denied; and, further, that in clay soils it is almost entirely useless. The case which came before Vice-Chancellor Bacon furnished an illustration of the unsatisfactory state of our knowledge on the subject. It was a suit against the Northampton Improvement Commissioners, in which an injunction was granted last year to restrain the defendants from polluting the river Nene with the sewage of Northampton. The execution of the writ had been delayed until the 1st of July this year, and a motion was made to enforce it by sequestration, which, as pollution was proved to continue, the Vice-Chancellor said that he was compelled to grant, but recommended that it should be suspended until the 1st of November next, as the defendants protested that scientific authorities were still in doubt as to the best mode of destroying the noxious qualities of sewage matter, and that the delay in obeying the injunction was caused by endeavours to discover whether it would be better to attempt a sewage farm, or to carry to greater perfection the plan which the Commissioners now adopted. This appears to be a system of defecation by means of large tanks, in which the sewage is precipitated by an admixture of sulphates and clay. The sewage matter is deposited at the bottom of the tanks to the extent of 400 tons a week, and sold in a dry state to the neighbouring farmers. In support of the present plan the defendant put in some evidence of Dr. Letheby and Mr. Hawkeley, the concluding passage of which is as follows:—

“Finally, we think it right to state that both before and since our visit to Northampton we have made careful inspection of all the principal works of irrigation and precipitation used for the prevention of the fouling of rivers by sewage water, and that the result of our investigations briefly stated is, that on the whole a much greater sanitary improvement in the prevention of nuisances can be effected by the use of precipitating agents than by the application of sewage to the surface of land.”

Hertford and Ware.—A meeting of the general committee of the town council of Hertford has been held to consider certain proposals made by the Ware Board of Health to undertake the conveyance and disposal of the Hertford sewage in conjunction with that of Ware, on to certain lands proposed to be purchased by the Ware Board for the purposes of irrigation. The terms offered by the Ware Board were that the Board would undertake the conveyance and disposal of the Hertford sewage, on the payment of an annual sum of 400*l*. to be secured by lease for twenty-five years, all expenses of surveys, lease, agreements, &c., to be paid by the corporation; and also to undertake to construct the necessary works, to connect the Hertford with the Ware sewers at the estimated expense of 1,800*l*. The

committee were of opinion that the terms offered were very high, and as it was very doubtful whether, after the lapse of a few years, the whole of the concentrated sewage of the two towns being thrown upon a limited area, the land might not become so impregnated with the noxious fluid as to be an intolerable nuisance to the locality, the scheme might have to be given up, after a large expenditure had been incurred. Alderman Ludlow thought that it was the most feasible plan of getting out of the difficulty, with regard to the disposal of the Hertford sewage, that had been offered. He believed the plan of irrigation was the most likely to meet the requirements of the Lee Conservancy Act, and that it could be effected, in conjunction with Ware, at a very much less cost to the town of Hertford, than in any other way. Alderman Gilbertson advocated the A B C plan of purification of the sewage, which he had himself, he said, witnessed in operation at Hastings and elsewhere. The committee were almost unanimous in adopting the views and proposals of Alderman Gilbertson. It was then unanimously resolved that the town clerk should inform Mr. Cobham that the Hertford Corporation felt bound to make further inquiries. The town clerk was also requested at once to communicate with the “Native Guano Company (Limited), Works at Leamington, and offices at 1, St. Swin's-lane, London.”

Dublin.—At a recent meeting of the Dublin Corporation, the Lord Mayor formally announced that the Government had promised a loan of 300,000*l*. for the main drainage of Dublin and purification of the Liffey, on the same terms as to interest and repayment as they had already granted for the London main drainage.

HOUSE OF COMMONS.

LAW COURTS—SOUTHWARK PARK.

On the vote of 21,450*l*. for the purchase of site and erection of building for the new Palace of Justice, Mr. Ayrton, in his explanation of the vote, said, the royal commission had not declared their final adoption of the plan of Mr. Street, but they had expressed their readiness to approve of it. The object of the present vote, therefore, was to take such a sum as was necessary to clear the ground and lay the foundations.

Mr. Alderman Lawrence said that by the present plan the projected building would approach much closer to the Strand and Carey-street than in the original designs; but, as had been the case around the Westminster Palace, what was wanted was space from which the building could be viewed. They ought to look, not to the wants of the day, but to the wants that were likely to accrue. It was often said that Temple Bar was a great obstruction to the traffic of the metropolis; but it was not in consequence of Temple Bar that a congestion of traffic took place, but in consequence of the counter-traffic coming in and out of Chancery-lane. What was wanted was space for five or six vehicles to pass abreast, and that was what the present plan did not provide. He believed there would be no indisposition to remove Temple Bar, if the promoters of this building would place it far enough back to enable suitable approaches to be made to it, so that efficient arrangements might be made for the traffic. The Treasury, however, did not think it necessary to consider the subject of approaches, all it aimed at being to produce a building at a less cost. All the legal profession wanted was isolation and concentration; but the requirements of the public also should be attended to. He did not expect much from the Chancellor of the Exchequer or the First Commissioner of Works, but the matter should, nevertheless, be considered.

Mr. Beresford-Hope said he was glad that they had at last reached the accomplishment of a great work.

Mr. Ayrton said that all the committee were asked to do was to give a general assent to the plan. As for the question of approaches, they had nothing to do with that subject at the present time.

Sir J. C. Lawrence, as a member of the royal commission, protested against the alterations which had been made on the original plan in respect to light, air, and the approaches. He regretted that all other considerations should have been lost sight of save the sole one of economy. Other members spoke, and the vote was then agreed to.

At a recent sitting of the House, Mr. Locke called attention to the intended appropriation of

a large portion of Southwark Park for building purposes by the Metropolitan Board of Works; and moved that in the opinion of the House the whole of the land purchased under the Act of 1864 (the Southwark Park Act), should be preserved as a park for the use and recreation of the public.

Mr. Secretary Bruce said the general principle upon which the Metropolitan Board of Works had acted was a wise one. They considered that by the construction of the park the neighbouring property would be greatly increased in value; and, acting upon this, they had determined to set aside 16 acres, to be let on lease, by which they hoped to obtain, for the general body of the ratepayers, from 30,000*l.* to 36,000*l.* towards the expense of making the park. He asked the House whether it would be consistent with its dignity to pass a resolution calling upon the Metropolitan Board of Works not to exercise the powers conferred upon it by Act of Parliament. Such a resolution would not be worth the paper upon which it was printed. The matter was one for the ratepayers rather than for Parliament; and the proper course for the hon. member to take would be either to bring in a Bill repealing the power given to the Board of Works, or to apply for a legal injunction to restrain them from using it.

Mr. Locke consented to withdraw his motion, intimating, however, that he should early next session move for leave to bring in a Bill to restrain the Metropolitan Board of Works from diminishing the area of Southwark Park.

On the vote of 13,000*l.* for the new Home, Colonial, Poor-law, and other offices,

Mr. Beresford-Hope asked if the design would be exhibited to afford members an opportunity of judging of its character.

Mr. Ayrton said that Mr. Scott, the architect, would construct the building in harmony with the portion already erected. There would be no advantage in delaying the work for another year merely to allow members an opportunity of seeing a design which they probably would not know what to do with when they saw it.

Mr. Beresford-Hope accepted with great gratitude from the right hon. gentleman this homage to the profession of architects, even if made at the expense of the amateurs.

The vote was then agreed to.

On the vote of 37,250*l.* for the site of the National Gallery,

Mr. Beresford-Hope asked who would be employed as architect?

Mr. Ayrton replied that, subject to his acceptance of the conditions, Mr. E. M. Barry, the architect appointed by the late Government, would be employed.

ESSEX ARCHÆOLOGICAL SOCIETY.

THE annual general meeting of this society was held on Tuesday in last week, and proved an interesting day to those who attended. The meeting was held at Braintree, where three papers on various subjects were read, and from thence an excursion was made to several places of unusual attraction in the neighbourhood. The meeting for the transaction of business was held at the Horn Hotel, the company present at the meeting and during the excursion including a number of ladies.

The report stated that since the last annual meeting twenty-seven new members had been elected, besides four to be proposed that day, making a total of thirty-one, a larger accession than the society had received for many years.

The Rev. B. Lodge read a paper "On a Roman Sepulchral Monument, with Effigy of a Centurion, found at Colchester," illustrated by Mr. Parish, artist, Colchester.

The Rev. E. J. Hill followed with a paper "On a few brief Notes of Objects of Interest in the Neighbourhood of Braintree."

Mr. H. W. King, the honorary secretary, contributed the third paper, having for his subject "The Ancestry of Sir Denner Strutt, bart., the Cavalier."

Leigh Priory was suggested as the object of next year's investigation. The company then adjourned to luncheon supplied by Mr. Johnson, after which, in several vehicles, they proceeded on the excursion. The objects inspected were varying in character and interest, and the drives from place to place were through a beautifully picturesque district, abounding in well-wooded scenery, interspersed with hop grounds, abrupt declivities, and occasional glimpses of a long stretch of country. The first stage was to

Gosfield Hall (the residence of Mr. S. Courtland), once the shelter of Louis XVIII. and other royal fugitives from France, and the scene of banquetings given by Lady Rich and Lady Maltravers to Queen Elizabeth. The church was then visited; and at Gosfield Church Mr. King gave an explanation of the eucharistic vessels upon the altar, and Mr. C. F. Hayward added a few words about the character of the church. Shalford Church, Panfield Hall, and Panfield Church were each taken in turn, and at six o'clock the party returned to Braintree.

SOFT WATER v. HARD.

At a recent visit of the Manchester Town Council to the Waterworks, Mr. Bateman drew attention to reports which had been industriously circulated of late years to the prejudice of soft water, attributing to its use the great mortality which, unhappily, still existed in some of the large towns and cities in the kingdom. He stated, most unhesitatingly, that there was no foundation in truth for such reports; that they were entirely fallacious; and that the presumed facts which were relied upon would not bear the test of scrutiny. He referred to a table appended to the evidence taken before the committee of the House of Commons on the East London Water Bill, in 1867, in which the whole question of the metropolis water supply had been inquired into. This table purports to give the mortality of various towns and places, distinguishing between those supplied with water above and below 10° of hardness. The strongest proof that excessive mortality must be sought for in other causes than the hard or soft character of the water supplied to the inhabitants, will be seen by an examination of the mortality which obtains in different places supplied with the same water. For instance, the population assigned to Birmingham in the table alluded to (a town supplied with water of 15½ degrees of hardness) is made up of those living in Birmingham, King's Norton, and Aston, the density of population being respectively 100, 137 and 27 persons to the acre, the mortality being also respectively 26.5 per 1,000, 17.1, and 21 per 1,000. This varying mortality cannot surely be owing to the water, which is the same in all the three cases. Again, Liverpool, having water of 9° 6 of hardness, is composed of Liverpool and West Derby; the mortality being, in the former place, 33.29; and in the latter, 22.73, per 1,000; the water being exactly the same, but the density of population being, respectively, 100 and 3.7 per acre. Sheffield, a soft-water town, is composed of Sheffield and Eccleshall; the mortality in the two places being 28.45 and 22.75. Manchester, Salford, and Chorlton-on-Medlock, all places supplied with the soft water of the Manchester Waterworks, exhibited a mortality, at the time the table was prepared, of 31.48, 26.00, and 23.94 per 1,000, respectively. If the high death-rate in Manchester was due to the soft water, why did it not poison as many persons in the 1,000 in Chorlton-on-Medlock and Salford? Instances from all quarters of the kingdom could be crowded upon each other, showing a like result, and thus also showing the fallacy of the deductions which have been drawn from such unfair statistics as have been thus only slightly exposed.

A MEMORIAL FOR BOMBAY.

At the South Kensington Museum, a statue of the late Prince Consort has been temporarily erected, and it will remain there on view for a short time.

This fine memorial is the gift of the late Mr. David Sassoon, and is intended, ultimately, to be placed in the Victoria and Albert Museum, Bombay. The entire work is about 19 ft. in height, and is wholly of marble,—steps, plinth, pedestal, and supporting emblematic figures, of Sicilian; the statue of Carrara. The figure of the Prince has been modelled 8 ft. in height. The figure is standing; and the costume includes the robe and decorations of the Star of India. In the right hand there is a manuscript scroll,—and the left hand reposes on the breast. The portrait is perfect. He stands "a Prince indeed!"

The supporting figures are feminine, placed in sitting postures; on the right, Science,—on the left, Art. The proportions of the several parts are admirable; and, being entirely of marble, there are both breadth and keeping. The enriched mouldings of the pedestal and plinth have a

meaning. The oak leaf and acorn denote Strength; the olive leaf, Peace; and the lotus leaf and flower, Wisdom.

On two panels of the pedestal is inscribed, in four languages,—

ALBERT, PRINCE CONSOET:
Dear to Science; dear to Art;
Dear to Thy Land and Ours.
A Prince indeed!

The block of marble from which the statue of the prince has been carved is of the purest, clear and uniform, without colour, without blemish. We venture, on behalf of the British public at home and the native and British public of Bombay, to thank the representatives of the late David Sassoon for this princely memorial; and we cannot refrain from also thanking Mr. Noble, the sculptor, for his beautiful and most successful work.

THE PROPOSED THOROUGHFARE BETWEEN HOLBORN AND THE STRAND.

Mr. P. H. LE BRETON, member for Hampstead, has presented a memorial to the Metropolitan Board of Works, signed by 502 barristers and firms of solicitors having chambers in Lincoln's-inn and its immediate vicinity, urging the co-operation of the Board in carrying out the proposed new road from Holborn at Southampton-row to the Strand and the Victoria Embankment at Norfolk-street, the details of which have already been made public in connexion with the Mid-London Railway. The memorial states—

"That it is in contemplation to construct a railway from the point at the junction of the Hampstead, Kentish Town, and Camden roads, thence passing by the Euston-square Terminus of the London and North-Western Railway, and running to the Waterloo Junction Station of the South-Eastern Railway. The promoters of the railway are willing to co-operate with the Board in constructing the following new roads in the line of their railway—that is to say:—1. A road from Vernon-place, Southampton-row, passing across Kingsgate-street to Holborn, and thence in the line of the Little Turrell's-lane-fields; 2. A road from the south-west corner of Lincoln's-inn-fields, passing through Clare-market, and crossing Wych-street and Holywell-street to the Strand; 3. An enlargement of Norfolk-street leading down to the Strand now in course of construction, which will communicate with the Thames Embankment. It is also proposed to make a direct communication between Vernon-place and Theobald's-road, and to remove the pile of buildings between Holywell-street and the Strand, and to widen the latter at its present narrowest point to 70 ft. The road will bring into communication, by a direct road, the Thames Embankment, the Strand, Holborn, and the Euston-road, with the districts of Hampstead, Highgate, Kentish Town, Holloway, and in general the northern parts of London."

It is said the project has been submitted to the benchers of the Hon. Society of Lincoln's Inn, and to the council of the Incorporated Law Society, and has received the formal approval of both those institutions, as well as that of her Majesty's First Commissioner of Works, and of Mr. Street, the architect of the New Palace of Justice. It is also understood that no opposition has been offered on the part of the persons most affected by the course of the road and railway.

THE PROGRESS AND BUILDING TRADE OF HULL.

THE progress of this ancient seaport has of late years been very great. And so numerous have been the erections and development of certain parts of the town that the coming census cannot fail to show a very large increase. The building trade during the past few years has been active, the docks and public buildings increasing the ordinary work.

Within the last six or seven years a new town has sprung up at Drypool, which in 1835 was taken from the East Riding by the Municipal Boundaries Act, and united to Hull. Some hundreds of cottages have been built, which for the most part are, however, of a slight construction and somewhat confined, both in area and extent of out-door accommodation. The handiwork of the builder may also be traced in the construction of a better class of property in Heskale-road and other parts of the town; whilst, at the present time, several public buildings are engaging the attention of the builder and architect.

Looking back to the time when most of our large towns presented but few traces of improvement, we find that Hull possessed waterworks so early as 1613, which were worked by horses during a period of 157 years, when steam power was introduced. Its dock accommodation, which from time to time has found so much employment for the building trade, dates from the year 1778, when the first dock was opened. The

length was 1,703 ft., and the breadth 254 ft. In 1809, the Humber dock was completed at a cost of 220,000l. Its length is 914 ft., and its width 342 ft. Next followed the Junction Dock, which was opened in 1829, and constructed at a cost of 107,000l. It contains 6a. 5p. The New West Docks were made in 1867, and were estimated to cost 1,000,000l. The docks are nearly a mile long, and 120 yards in breadth. Even up to the present time workmen are still employed constructing warehouses, sheds, &c., for the accommodation of the shipping trade, which brings to the town something like half a million of money annually as Custom duties.

The public buildings in Hull have just now been augmented by the erection of several structures. Foremost in merit are the new dock offices, which for some time have been in the course of construction by the workmen belonging to the dock companies. The building which, when finished, will do credit to the company, is erected at the junction of Saville-street, on a triangular-shaped plot of land. It has three moderately large domes, and is beautifully carved on the exterior with the arms of the borough and other companies. Arrangements are being made for the erection of a public clock. At the junction of the Market-place the Hull Banking Company are erecting a substantial and somewhat ornamental building. The work is being done by Mr. Musgrave, and is making satisfactory progress. The High Church is being renovated, and several improvements introduced. Amongst the public buildings of recent construction may be mentioned the new town-hall, by Brodrick. The structure is in the Italian style, and has a frontage of 105 ft. to Lowgate. It has a central tower 135 ft. high, and was built at a cost of 28,000l. The new theatre was set apart for public use in 1867, the new corn exchange in 1856, and the public baths and wash-houses in the year 1850.

The population of Hull in 1801 was 29,849; in 1811 it had increased to 37,466; in 1821, to 45,078; in the year 1841 it had increased to 66,268; and at the last census it was 97,661; whilst now it is considerably more than the last-named figure.

ROMAN PHOTOGRAPHS.

SOME of our readers may be glad to know that Mr. Parker's photographs from Rome will remain in Cundall's Gallery, Bond-street, until the 13th of August. Mr. Parker writes to us,—"These photographs throw a new light upon many things in Rome which have hitherto been very obscure. Photographs can only tell the truth, and the naked truth is not always quite agreeable to either party. This is probably the reason that this Exhibition has been received with such remarkable apathy and indifference by both parties. The Liberal party does not like to see the Niebuhr theory shaken by seeing that the walls of Romulus, Aeneas Martius, and Servius Tullius, and the buildings of the time of the Republic and Early Empire succeed each other in natural chronological succession, exactly as we should expect from Livy's history, especially from the first book, which is considered by many of the Niebuhr school as a mere fable, or at best an historical romance. On the other hand, the Jesuit party in the Roman Church, and their followers and admirers, do not like to see the traditional history of the paintings in the Catacombs upset by a comparison of them with the mosaic pictures in the churches of Rome. It is always assumed by the Jesuit school that these paintings of saints and of the Madonna are of the second and third centuries: the greater part of them are really of the eighth and ninth; and another large proportion, of the sixth. They were painted by the Popes for the pilgrims, when the Catacombs were restored after the invasion of the Lombards. I have no hesitation in saying, after a long and careful study of the Catacombs, that on all points in dispute between the Roman Catholic and the Anglo-Catholic, the evidence of the Catacomb paintings is entirely in favour of the Anglican view; and this, I believe, is proved by these photographs,—that is, by the comparison of the mosaics in the churches with the fresco paintings in the Catacombs.

The Pontifical Government, which has hitherto treated me with such kindness and consideration, has now, under the dictation of the Jesuits, reversed its conduct: the same parties who have dismissed my worthy and excellent friend, Padre Theiner, from the post he had filled so long and so well, of keeper of the archives, because he allowed some of the non-Jesuit party to see a

little of the truth, has also forbidden me to take any more photographs in the Catacombs, or even in the Pagan tombs on the Via Latina, because the frescoes in these tombs are really of the time of the martyrs, and a comparison of them with the frescoes in the Catacombs makes it quite impossible to believe that both can be of the same period. The art is altogether different."

Whether the conclusions at which Mr. Parker has arrived, from the study of the objects shown in these photographs, are correct or not, which may fairly be a matter of opinion, the photographs themselves are more exact representations of the objects than can be obtained in any other manner, and we advise our readers to go and see them.

BUILDERS' BENEVOLENT INSTITUTION.

THE twenty-third annual general meeting of the friends and subscribers of this charity was held on Thursday (28th ult.), at Willis's Rooms, King-street, St. James's, Mr. J. M. Macey, the president of the past year, in the chair. The purpose of the meeting was to receive the report for the past year, to elect a president, treasurer, directors, and auditors for the year ensuing, and other matters connected with the welfare of the Institution.

Mr. Harris, the secretary, read the report, which showed that the total number of pensioners is now forty-four, viz., twenty-two men and twenty-two women. The pensioners last elected were Mr. Richard Burdett and Mrs. Martin. The amount of stock, Three per Cent. Consols, purchased during the past year is 325l. 5s., 216l. 16s. for the relief fund, and 108l. 9s. for the building fund, making a total of 15,075l. 14s. 11d., viz., 11,923l. 5s. 8d. for the relief fund, and 3,152l. 9s. 3d. for the building fund.

On a proposition from Mr. Cooper that the thanks of the meeting be accorded to the patrons of the Institution, and that the names of Mr. Thos. Brassey and Mr. J. M. Macey be added to the number, it was unanimously carried.

Mr. Plucknett next moved a vote of thanks to Mr. Macey for his performance of the onerous duties of president for the past year, which he had carried out with the greatest satisfaction.

This vote was also unanimously passed, and Mr. Macey acknowledged the compliment. An important instance of the need of the Institution had just come to his knowledge. He had heard the name of one who from his position did not appear to have the slightest possible chance of ever being associated with poverty, but misfortune had overtaken him. With respect to his duties having been onerous, such was not the case, for which he was indebted to Mr. Plucknett, the committee, and the secretary, who made them as light as possible.

The retiring directors and auditors were next re-elected, after a marked expression of approval of past services.

On a vote of thanks to Mr. G. Plucknett, the treasurer, being proposed, Mr. J. Thorne said he had much pleasure in seconding it. For some years, since they lost the services of Mr. G. Bird, Mr. Plucknett had filled the important office of treasurer with great zeal and ability, and there was hardly a meeting but which he attended. He had taken great interest in the Institution, and had rendered it very valuable service, and they might think themselves fortunate in having obtained the services of so good and talented a man.

Mr. Plucknett returned thanks for the very kindly manner in which the vote of confidence had been passed. It was true the receipts were not quite so good as usual, owing to the fluctuation in the trade. He, however, had a hope that next year they would be as good as formerly. They were not very deficient, when they considered that all the charities had felt the effect of the general bad time.

The offer of Mr. Alfred J. Mansfield to officiate as president of the Institution for the ensuing year, was cordially accepted.

The remaining business was then disposed of, when it was stated that there would be an election of pensioners in November next.

MAN THE BOATS!

SIR,—Would it be possible to apply the principle of the measuring tapes (inclosed in a round box, which can be run out any length, and then wound up again) to the lowering of boats into the sea? Would it be practicable to have a ring attached (as by the ring on the measuring tape) to the stern of boats when hung up, such ring fastened to a rope in a round box in the ship, so that in an instant, if required, the boat would be run out into the sea, and when launched the ring unfastened and the rope wound up in the ship?

H. B.

THE NATIONAL STRENGTH.

SIR,—I was much interested in the leading article in the *Builder* of the 23rd of July ult. I consider Dr. Beddoe's investigation a very important one, and one that ought to have been made years ago. There is a popular belief among working men that the English labourer is fast deteriorating, and this opinion is universally believed in by labourers, workmen upon public works, and also by the farm labourers in the south-east of England. I have often heard them speak of feats of strength, endurance, and agility that were performed from forty to eighty years back, such as the weights lifted, the quantity of timber sawn in a week by a pair of sawyers, the quantity of grass mown or corn

reaped in a given time, or the yards of earth excavated, and their concluding remark is, "Every generation gets wiser, but weaker." It is a question of national importance, and one that affects the safety of the country; for what is the use of the most improved arms if the wielders of them are deficient in strength and stamina? The history of the bayonet is a case in point. An improved arm may give a temporary advantage, but superior strength and stamina in the men and a permanent advantage. It is to be hoped Dr. Beddoe will pursue his researches, and ascertain whether the English improve or not by emigrating. It strikes me some curious facts would be ascertained. I think it probable the English race, for instance, in South Africa, would differ materially from those in Australia or America. I take one thing for granted, that as a rule a civilised man is inferior, physically speaking, to savage races (?). A friend of mine, who had been three or four years out on the North-west Coast of America, brought home some photographs of the Chinook Indians; they struck me as being deficient in bulk of limb, and I was surprised at a statement of their strength and endurance. Is it the climate, or their exercise, or their food?

T.

MANSION IN SURREY.

THE mansion, of which a view and plan are given, is situated at Haslemere, on an old site upon the side of a hill, commanding an extensive and beautiful view. The steepness of the ground allowing but a small space for the building itself, has given rise to the peculiar arrangement of placing a row of cellars, larders, &c., at right angles with the main house. A carriage approaching the house drives under an archway, A (with a room over), the space from e to f being under cover; the carriage then passes round the out-buildings, and comes back by an archway, g, corresponding to the porch. The stables are in close proximity to the house, and are hidden by the shrubbery.

The house is built of red brick, of a fine quality and colour, from Rowland's Castle, the cornices being of moulded brick of the same make; and the windows and dressings are of red terra-cotta, supplied by Mr. Blashfield, of Stamford. The roof is tiled. The staircase, the panelling of the hall, and the doors of the reception-rooms are of oak. A recess, forming an "angle nook," at the back of which is the fire-place, is obtained in the library, under the upper flight of staircase, which is divided from the hall by moulded piers and arches of oak.

The architect is Mr. F. P. Cockerell. The general contractors are Messrs. Hayward, Bros., all of London.

THE RELIGIOUS INSTITUTE, MANCHESTER.

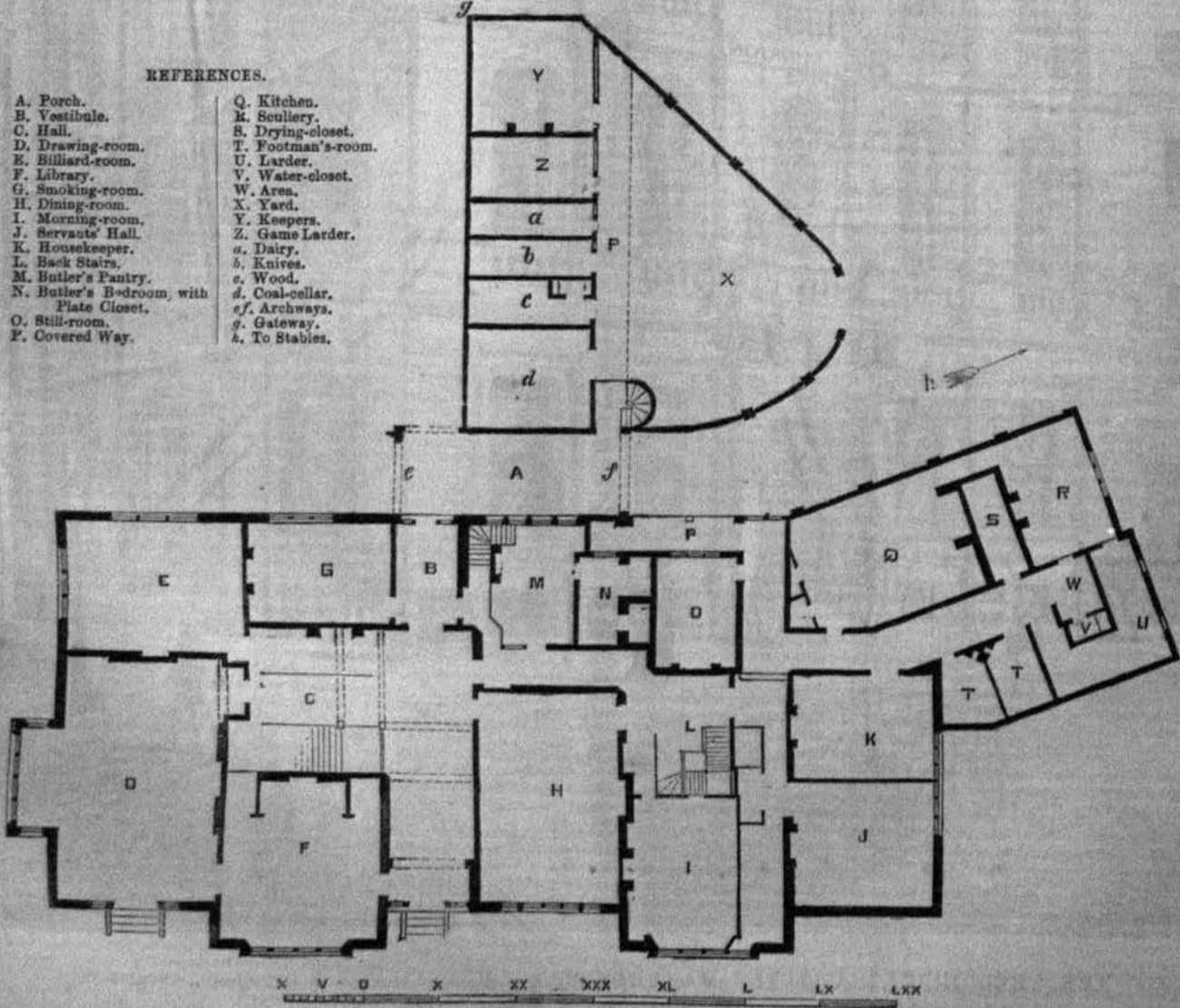
THE Religious Institute, which forms the subject of our illustration, is now in course of erection in Corporation-street, Manchester. The site was purchased by subscription, and the building is being erected at the sole expense of Mr. John Fernley, of Clairville, Southport, and it is expected will be ready for occupation by February next. The object has been to provide suitable depôts for the Bible and Religious Tract Societies, and offices for the City Mission; and, in addition, a spacious room, occupying the whole of the two-pair floor, about 60 ft. by 40 ft., and accommodating from 400 to 500 persons, is provided for the purpose of holding prayer-meetings, tea-meetings, and other meetings of a strictly religious tendency; it being expressly stipulated by the donor that no political or semi-political meeting shall be allowed to be held there. Rooms for a porter's residence are provided in the basement.

The front and side, as shown in the view, are being executed in stone. The pilaster-shafts and spandrels of entrance-doorway are of polished Peterhead granite. In the design the aim has been to give a quiet dignity to the building by breadth of surface, deeply-recessed reveals, and simple detail relieved by carving. The latter is by Messrs. T. & R. Williams, of Manchester. The Bible, as an appropriate enrichment, is made to form part of the keystone of the front entrance doorway.

The architects are Messrs. Horton & Bridgford, of Manchester, and the contract was let to Messrs. Swindells & Little, of the same city, for the sum of 4,051l.



MANSION IN SURREY.—MR. F. P. COCKERELL, ARCHITECT.



SCALE OF FEET

Plan of Ground Floor.



THE "RELIGIOUS INSTITUTE," MANCHESTER.—MESSRS. HORTON & BRIDGFORD, ARCHITECTS.

DANGER OF LIGHTNING.

MR. ARTHUR GEARING suggests the possibility of our having a repetition of Tuesday's storm, and the propriety of taking some precautions against damage from water and lightning.

To judge from past events, I fear there is little chance of his good advice being heeded. St. Saviour's Church, struck for the second time, will serve for a specimen of how much regard is paid to warnings to take care of our buildings. Then, as to human life, how many times since the days of Franklin has this caution been repeated,—Keep away from trees during a thunder-storm? Yet what happened on Clapham Common on Tuesday morning? Two persons, sheltering from the rain under a tree (one sitting and the other standing, with his left foot on the seat), were struck, and severely injured. The report of the disaster, instead of dwelling on the real cause of it,—their sheltering under the tree,—says, "Mrs. Bulpin's stay-busk and crinoline steel are supposed to have attracted the lightning;" just as if her head had not received the charge of electricity first. Probably, all the harm done by the stay-busk, &c., arose from any burns caused by their fusion, if they were really fused. Some French electricians state that more men than women are killed by lightning. Is this because women generally have some small lightning conductors in their stay-busks, that would, to some extent, protect those portions of their bodies near which they were placed, in the same way that a wire or pipe will often convey the lightning, and prevent it doing injury for, at least, the distance that the wire, &c., extends? There is, or was, a good example of how readily lightning will leave a tree for a better conductor, to be seen in the Mall, St. James's Park, nearly opposite Marlborough House. A tree was struck that had an iron seat under it; the lightning took a strip of bark from the tree down to the level of the seat, and there leaped out, and found its way to the ground. Had any one been sitting on the seat, most probably he would have been killed, and we should have found the tree only barked to the height of the head from the ground.

It would not be a bad plan, when a tree in our public parks was struck like the one I have mentioned, to put a little warning memorial under it, something after this style:—"This tree was damaged by lightning on the — of —." Caution—Keep from under trees during storms."

There are numbers of persons who are needlessly cautious, who put away their knives, needles, &c., during a thunderstorm; or cover up, as I once saw done, the fireirons with the hearth-rug, as if the lightning would pay more respect to a rug than to a stonewall; yet let them be caught in a storm, off they run to the nearest tree, and risk their lives to save their bonnets. These persons will tell you "they have seen the lightning run down the fireirons," with as much gravity as if the house really had been struck, though the amount they would see passing down the irons then would be rather small. Perhaps when a slight knowledge of electric science is more general than at present, warnings may be heeded, but till then I fear it is a hopeless case.

H. T. G.

SAFETY OF THE "CHEESEWRING."

WE are glad to receive the following:—"Our attention has been called to a paragraph in your issue of the 30th ult. in reference to the above subject.

As the lessees, under the Duchy of Cornwall, of the Cheesewring Quarries, we feel it is due to ourselves to say that the report which has been industriously circulated that danger is arising to the 'Cheesewring' from the quarry operations in its neighbourhood, is without foundation.

It is quite true that the quarry has approached the Cheesewring, but any one who is acquainted with the structure of the granite formation will easily understand that the beds upon which such a pile as the Cheesewring rests may be separated entirely from the surrounding rocks by vertical heads or joints, and that quarrying operations may be carried on in the immediate neighbourhood without any danger to them. This is actually the case at Cheesewring.

But in addition to this natural guarantee of security, we are bound to say that the Duchy authorities have been fully alive to the matter, and we know that they will acquit us of any

want of disposition to carry out the arrangements which have been made, with a view to allaying the groundless disquiet which has been awakened in the public mind with respect to the safety of the pile.

We may add that very exaggerated statements have been made respecting 'powerful blasting operations.' It was reported to the Duchy that we were in the habit of firing holes charged with 300 lb. of gunpowder; the fact being, that 10 lb. are very rarely exceeded, the absolute range of charges being from 5 lb. to 15 lb. The vibration of the air caused by a clap of thunder has a far greater effect upon the pile than the heaviest charge of powder which has ever been exploded in the quarry.

JOHN FREEMAN & SONS.

TOWER CHIMES WITH KEYS;

OR, LE CARILLON À CLAVIER.

DURING the last few years I have frequently pointed out, in the columns of the *Builder*, the prominent features of the machinery of the most excellent self-acting periodical chimes, or *carillons*, in Belgium, and suggested that it would be well to introduce similar instruments of moderate compass and size in some of our towers in Great Britain.

On the present occasion I have a very few words to say on chimes played by hand, or, as designated by French writers, *le carillon à clavier*. In several instances the Belgian instruments of this description have forty bells and upwards, tuned to the chromatic scale, with a set of keys for the hands and pedals for the feet. The keys may be called projecting sticks, being wide enough asunder to be struck by the hands clenched and sideways, without hitting the neighbouring sticks.

In his work on "The present State of Music in Germany, the Netherlands, &c.," London, 1773, Dr. Burney gives a very amusing account of certain wonderful performances upon *le carillon à clavier* at Amsterdam. He says:—

"At noon I attended M. Pothoff to the tower of the *Stad-huis*, or tower-house, of which he is *carillonneur*; it is a drudgery unworthy of such a genius; he has had this employment, however, many years, having been elected to it at thirteen. He had very much astonished me on the organ, after all that I had heard in the rest of Europe; but in playing those bells, his amazing dexterity raised my wonder much higher; for he executed with his two hands passages that would be very difficult to play with the ten fingers; shakes, beats, swift divisions, triplets, and even *arpeggios* he has contrived to vanquish.

He began with a Psalm tune. . . . He next played variations upon the Psalm tune with great fancy and even taste. When he had performed this task, he was so obliging as to play a quarter of an hour extempore in such a manner as he thought would be more agreeable to me than psalmody; and in this he succeeded so well that I sometimes forgot both the difficulty and defects of the instrument; he never played in less than three parts, marking the bass and the measure constantly with the pedals. I never heard a greater variety of passages in so short a time; he produced effects by the *pleins* and *fortes*, and the *crescendo* in the shake, both as to loudness and velocity, which I did not think possible upon an instrument that seemed to require little other merit than force in the performer.

But surely this was a barbarous invention, and there is barbarity in the continuance of it; if M. Pothoff had been put into Dr. Dominetti's hottest human cauldron for an hour, he could not have perspired more violently than he did after a quarter of an hour of this furious exercise: he stripped to his shirt, put on his nightcap, and trussed up his sleeves for this execution; and he said he was forced to go to bed the instant it was over, in order to prevent his catching cold, as well as to recover himself, he being usually so much exhausted as to be utterly unable to speak."

I cannot, of course, deny the statement of the learned doctor, that M. Pothoff perspired so violently after a quarter of an hour of this "furious" exercise, and was usually so much exhausted as to be utterly unable to speak. But having tested the touch and action of some of the largest instruments now in existence, and attended the excellent organist and *carillonneur* of Antwerp Cathedral during some remarkable performances, I may state that, in the present day, so far from being a "drudgery," playing upon *le carillon à clavier* is an agreeable recreation.

To prevent mistakes, however, let me add, that any musician practically acquainted with one of the finest instruments of this class ever constructed, must agree with me, that it is utterly incapable of producing all the varied effects mentioned by our highly esteemed author.

THOMAS WALESBY.

Society of Engineers.—Arrangements have been made for a visit of the members to the new works of the Chartered Gas Company at Beckton, on Monday, the 8th of August.

NEW MANSION AT BARNARD CASTLE.

A CONSIDERABLE extent of land on the north side of the Greta Bridge-road, near the Militia Barracks, Barnard Castle, which is now being enclosed with high walls, and in the centre of which the outlines of a large ornamental building are beginning to appear above the ground, has been purchased by Mrs. Bowes, the wife of Mr. John Bowes, of Streatham Castle. The building will be in the nature of a museum, as it is stated to be the intention of Mrs. Bowes to place therein a large and valuable collection of ancient and modern paintings and objects of art and curiosity, now in France, which Mr. and Mrs. Bowes have spent many years in collecting. The length of the frontage is about 300 ft.; the height of the centre pavilion, 115 ft.; the height of the two end pavilions, 90 ft.; the picture galleries are 400 ft. in length; the cellars, 210 ft. by 45 ft., which are built entirely of dressed stone. It is in the Renaissance style of architecture, ornamental in character, from designs by Mr. J. E. Watson, architect, Newcastle-on-Tyne, under whose direction it is being carried out. Mr. Joseph Kyle, also of Newcastle, is the contractor for the whole of the works.

THE CRYPT AT ALDGATE.

THE houses at the end of the block separating Leadenhall-street and Fenchurch-street have been pulled down in order to widen the entrance to both these thoroughfares, and a very considerable improvement has thus been effected. Underneath one of these houses, however, and just opposite Aldgate Pump, was an ancient crypt that has been described in our pages more than once; and the vaulting of this being found insecure and, as we understand, too high to suit the level of the new pavement, it was taken off, and the crypt has been filled in,—in fact, to all intents and purposes, obliterated. This is very much to be regretted: it was an historical landmark, a vestige of ancient London, and of value for more reasons than one. However, it is of no use re-pining, still less finding fault; the past must yield to the present: onwards is the word, and onward we must go. Some of the papers, including journals supposed to know better, have described the crypt as a discovery,—simple nonsense.

BELLS, LIVERPOOL.

SIR,—A letter in your publication of July 30th, describing the "blessing" of a peal of bells by the titular Roman Catholic Bishop of Liverpool, contains a statement that "St. Francis's is the first and only church in Liverpool which can boast of a peal of bells." This must have been intended to mean the only Romish church, as three other churches of the Established religion in the town have peals, two of them good, and one of them splendid.

The parish church of St. Peter has a good peal of ten bells, recast (with, I presume, additional metal) from a peal of eight just forty years ago, the old peal appearing, from the annals of the town, to have been cast at Dobson's foundry, Downham, Norfolk, early in the eighteenth century, the church having been begun in 1700, and consecrated in 1704. The old peal of eight were in tone superior to the new ten, which are, however, good.

St. Luke's Church has a good, but light-toned peal of eight, first rung in 1829, the church having been begun in 1811, and consecrated in 1831, remaining for some years incomplete. These bells are hung in cast-iron framing, and it used to be thought, I am now rather of opinion erroneously, that their tone suffered from this.

The other parish church, St. Nicholas, known as the "old church," being on the site first occupied in Liverpool by a chapel-of-ease under the mother parish of Walton, possesses a magnificent peal of twelve bells, of large scale, unsurpassed in tone by any I have heard in the kingdom, and a good deal resembling the peal of ten in York Minster. These seem, from the town annals, to have been supplied at twice, a "set" being recorded as purchased from Drogheda, out of the proceeds of the town fines, in 1628, and six more from Bristol, paid for out of the same fund (as well as were the first peal of St. Peter's), in 1725. The effect of these bells, when ringing changes on a quiet night, as heard outside the town, at some two miles or two miles and a half distant, or from the western or Cheshire shore of the Mersey, on the eastern margin of which the church stands, is literally sublime,—the richness

and fulness of tone, with the combinations which, through the blending power of distance, the harmonies in the long succession of an octave and a half render to the ear, producing an overpowering effect, such, indeed, that I have seen persons of strong musical and poetical sentiment yield their whole feelings to it as long as the sound lasted. This effect, under the swelling and diminishing alternations caused by a fitful breeze, can be compared only to that of a gigantic Æolian harp, sounding, as it might seem, from the clouds; and whether from the position of the building or other causes, this grand peal of St. Nicholas's, Liverpool, excels in this respect any that I am acquainted with. The bells are not by any means known as they deserve. Their great weight and power have a crashing effect when heard near, but as heard at a distance they deserve all and more than I have said of them. Their fulness and volume may be judged of by the fact that they can be heard in quiet weather, at Preston, some thirty miles north of Liverpool. If the peal at St. Francis Xavier's is a good one, the position of the building, rather high on the eastern slope of the town, will give great advantages for its effect; but I do not look for anything like what I have just described.

AN ARCHITECT.

WAKEHURST, ARDINGLY.

THE interesting Elizabethan mansion known as Wakehurst, in Ardingly, Sussex, having been purchased by the Marchioness of Downshire, who has determined on restoring the original structure, and enlarging its extent, for which purpose a new wing will be added, at a cost of upwards of 4,000*l.*, the ceremony of laying the first stone was performed on Monday, July 18th, by the marchioness, who briefly addressed the workmen, congratulating them upon their steady conduct, and assuring them that while such continued they would always find in her a friend.

A substantial supper at the Gardeners' Arms, on Thursday, followed. Amongst the toasts we hear of Mr. Box, the contractor, and Mr. Brown, "the superintendent of the works;" but no architect's name appears. It is to be hoped that so interesting an old building as Wakehurst is will not be meddled with excepting under proper artistic direction.

NEWARK CHURCH COMPETITION.

EIGHT architects residing in Nottingham and neighbourhood having sent in designs by invitation, the committee called in Mr. G. G. Scott, who pointed out two designs for choice, one by Mr. Evans, the other by Mr. Knight. Mr. Scott suggested that Mr. Knight's chancel was too small, and the committee have given the commission to Mr. Evans.

A correspondent, who signs himself "One who has wasted Five Weeks in the Preparation of his Design," objects to the referee's report, and says that as the church is to accommodate 600 persons at the cost of 3,000*l.*, Mr. Knight's chancel, 32 ft. long and 19 ft. wide, is quite large enough. We should think so too. When, however, a committee call in a professional referee of standing, and follow his advice, we are disposed as a rule to accept the decision without comment. No one will doubt that the report in the present case was an honest one, and architects who choose to compete must take their chance as to the particular bias or opinions of the referee who may be chosen.

AN ARCHITECT'S ACTION.

At Rotherham County Court, before Mr. Thomas, Ellison, Judge, the action, Thomas Dobb v. William Kitto Giddings, has been tried. In this case the plaintiff, an architect, of Rotherham, sued the defendant, a medical man, residing at Calverley, for 11*l.* 11*s.*, the price of plans, &c., for a villa residence. On the part of the plaintiff, it appeared that in 1868 the plaintiff received instructions from the defendant to prepare plans for a new villa residence, to be built at Calverley, and the instructions thus received were carried out. A few alterations were made at the defendant's suggestion, and tenders were advertised for. The defendant then considered that the cost was larger than he intended it to be, and said he would have a less house. He instructed the plaintiff to send in his bill for preparing the plans, which amounted to 11*l.* 11*s.* The defendant thereupon declined to pay this sum, and the present action had, therefore, been brought. The plaintiff, cross-examined, said that certain alterations were made in the plans after he sent them in at the defendant's request, and these had increased the cost. For the defendant it was contended that the plans were not made at all in accordance with the instructions given by the defendant, a specific sum, viz., 600*l.*, being mentioned as the

utmost that the erection of the villa must cost, and the tenders far exceeding that sum.—The defendant swore that plaintiff offered to prepare the plans, and that if they were not used he would make no charge, but, if they were, the charge would be 3 per cent. He distinctly mentioned that the house was not to cost more than 600*l.* The Judge said he considered that the case was not made out, and he should, therefore, give a verdict for the defendant. At the suggestion of the Judge, costs were not asked for.

HOT-AIR STOVES.

SIR,—I see that the stock of the late Mr. Pierce is to be sold. It is to be hoped that some stove manufacturer will take up the patent (which is an improvement on the ordinary hot-air chamber), and supply the stoves to the public at a moderate cost, and with slightly fronts. Their high price and their repulsive ugliness, have hitherto prevented the general use of this most valuable grate.

G. AITCHISON.

EPHING FOREST.

SIR,—You some time since permitted to appear in the *Builder*, a proposition regarding public access to open spaces, by means of footpaths, to be made by negotiation with the landowners. May I now be permitted to point out the application of this principle in the case of the projected enclosure of Epping Forest? Report says that if the Act be passed, 600 acres are to be reserved for public use out of the several thousand acres to which the public has hitherto had free access. Suppose that while 600 acres of this reserve of 600, are laid out in a park of compact form, the remaining hundred acres are applied in conformity with the special object of this letter. One hundred acres formed into an elongated band of ten yards wide, would form a walk of more than 27 miles in length. Such a walk taken in a serpentine direction, might lead the pedestrian over the whole region now occupied by the forest. But ten yards is an excessive width for a country footpath; and if in those parts of the walk most remote from London, the width were diminished to one or two yards, a great saving in the acreage would be effected. Such savings of acreage might be applied to the formation of oases at intervals, or, in plainer language, sidings, with seats to accommodate the wayfarer, and alcoves to shelter him. Such sidings might be placed where clumps of trees newly planted, or else remaining within them as vestiges of the old forest, would produce the best effect.

The present is the time for negotiation. It would be essential that a condition of enclosure should be the bounding of the proposed walk by an open wire fence, and not a high close wall.

While what might be called a concentrated syrup of nature may be viewed by means of private resources, in an aquarium or a flower garden, it seems daily becoming more needful that State aid should favour the unrestrained pedestrianism, which is equally essential to forming an efficient volunteer, a *Salvator Ross*, or a J. M. W. Turner, R.A.

G. M.

IRON GIRDERS.

SIR,—Will one of your correspondents be good enough to inform me what grounds there are for making the proportion of the top and bottom flanges of cast-iron girders different when the weight is on the top or bottom flange? Hurst gives one-third in the former, and one-sixth in the latter case. In the late Mr. Aspinell's book "On Architecture and Building" I do not see any notice taken of this, but I suppose that Mr. Hurst had some authority for the statement in his Handbook.

L. S.

COMMONS, FOOTPATHS, AND BRIDLEWAYS.

SIR,—A cry is at last raised—"When will Government defend our commons?" But there is another and a louder shout, which ought to echo throughout England—"Who will preserve our pleasant footpaths and bridleways?" Slowly, silently, and surely, these byways of merry England are being encroached upon.

"Jog on, jog on, the Footpath way,
And merrily bent the Sile-a;
A merry heart goes all the day,
Your sad tires in a Mile-a."

said Shakespeare. If something is not done, however, we shall have to jog off instead of on. Local associations have been formed to check the evil, but their power is limited, and their very existence proves the necessity of Parliamentary interference. The existing law is jealous in guarding these public rights, and places numerous obstacles in the way of aggression. A method, however, has been found to evade the law.

The plan is this. A man desires to stop an ancient footpath. What does he do? Just this: if there is no middle class in the neighbourhood to oppose him, he puts up notice boards, saying there is "No Road," and threatening prosecution. Fences, or other improvements, are placed across the way. Keepers, or men of some kind, are told to annoy and intimidate passengers. Supposing there is some person who has energy enough to assert his rights, and break open the way, the landowner at once issues an Exchequer writ, and if an appearance is put in, the matter has to be tried at the assizes.

Consequently, if the man has not 100*l.* to spare, he is forced to drop the matter, and the landowner carries his point.

It is not necessary to expatiate on the pleasure or utility of footpaths and bridleways; these ancient byways of old England have existed for ages. Over green pastures, through shady woodlands, and midst waving cornfields, how delightful are they! To the tired labourer who "homeward plods his weary way," what a boon is the short cut, and how much smothered hate does the stopping up of an old footway cause in the country around?

It is impossible to estimate the ultimate effects of the bad feeling created by such wrongs. It is a great, increasing, and crying evil, which has been too long overlooked. There is a remedy for it, neither difficult nor costly, which would save much litigation throughout the land, and insure our byways to us for ever. In the meantime a check might be put on these encroachments at once, if the Government would only order that all such highways be marked and lettered on the new great Ordnance survey.

Were this done, and sign-posts put up on these roads by the parishes, and provision made for their due maintenance, a great boon would be conferred on all men, from the peer to the peasant, though more especially on the working classes.

G. R. JESSE.

OBITUARY.

Mr. John Shaw, Architect.—We mention the death of this gentleman with extreme regret. Mr. Shaw was the attached architect at Christ's Hospital, London, and one of the earliest members of the Royal Institute of British Architects. In the latter part of his life, he had acted very much as a referee. We had desired to give a notice of his life; and one well qualified, by long personal knowledge, had undertaken to write it. In deference, however, to the strongly-expressed objection to publicity on the part of a member of Mr. Shaw's family, we give up the intention.

Mr. Zocher, Holland.—We have to announce the death of Mr. J. D. Zocher, architect, of Haarlem, on the 8th of July, in his eightieth year. He had been, for thirty years, Honorary and Corresponding Member of the Institute of Architects, and had frequently communicated valuable information, as he took a deep interest in the success and operations of the Institute.

Mr. J. B. Pyne, Artist.—Mr. J. B. Pyne, the artist, who was for many years vice-president of the Society of British Artists, died at his residence, in the Camden-road, on the 29th ult., in the seventieth year of his age. Mr. Pyne was a native of Bristol, and, when a lad, was articled to an attorney. The law was not, however, to his taste, and he soon abandoned it to follow the more congenial pursuits with which his name has become associated. His views of the English lakes and his Italian scenes are the works by which he is best known. Mr. Pyne had been ill for many months, and for some time but little hopes had been entertained of his recovery.

ACCIDENTS.

Fall of Houses.—Leather-lane has been the scene of a very alarming occurrence. A house used for the business of a wholesale and retail provision merchant, and the next house, in the occupation of a greengrocer and fruiterer, have partly fallen to the ground. The storm of Tuesday week had, no doubt, some influence in causing the accident. The houses were in a dilapidated condition from old age and decay, and the inmates had received notice that they were about to be pulled down. Just before the accident happened a loud noise was heard, and portions of the two houses were seen falling towards the street, and at the windows of the remaining portions were to be seen men, women, and children crying piteously for help. Mr. Bridges, the chief officer of the metropolitan brigade, having been given to understand that a fire had occurred, had the engines and a fire-escape brought to the spot, and the firemen were instrumental in extricating several families. There has been great destruction of property, but it is believed no lives have been lost.

Church Spire Struck by Lightning.—A great tempest has occurred at Rotherfield, when a vivid flash of lightning struck the spire of the church at the top of the shingling on the west, displacing some shingles, and then on the north side, immediately at the same place where the spire was struck on St. Swithin's-day in 1848.

At the present time (as on the above-mentioned day), a considerable rent was made from a few feet down from the upper damage, to nearly the bottom of the spire, a distance of nearly or quite 30 ft., the main heart-of-oak timbers being shattered, and the churchyard strewn with shingles. About the same time the electricity struck a barn on Stockwell Farm, Town-row, about a mile from the town, and in a few minutes the building, which contained a wagon loaded with hay, and a cleaning machine, was in a blaze from bottom to top, and, with the contents, was entirely consumed. Lightning has been committing a good deal of damage this year, and not a few lives have already been lost by it.

Falls from Buildings.—One of the men employed in the work in the course of progress at Bath Abbey, has had a narrow escape from being killed. He and some others have been engaged in doing repairs to the roof of the nave at the extreme west end; and in order to raise the materials necessary, a jib had to be fastened to one of the turrets, from which a wheel and rope were suspended. The work had been completed, and the apparatus was about to be taken down, the man having undertaken to do it. In order to get at the wheel, which was fastened to the jib, he placed a ladder at the side of the turret, the other end being on the roof of the nave. Unfortunately the ladder was not properly fixed, and on the man ascending it, it turned over on its side (which was parallel with the western wall), and he was thrown over, with about 80 ft. between him and the ground. He fortunately, however, caught hold of the line which hung from the wheel and was fastened to it. He had fallen 20 ft. before he took hold of the rope, and such an impetus had been given to his descent by this preliminary fall, that he came down very rapidly, still retaining a firm grasp of the rope. The man's life was in this way saved, but he sustained some very painful injuries, especially to his hands.

THE ITEM "WASTE."

SIR,—The profitable appropriation of anything hitherto thrown away, obviously, is a gain to manufacturing industry; but notwithstanding that such gains are often realized, and largely, too, in many instances, there is a large amount of wealth waiting to be won, in the shape of waste products yet unutilised. It may reasonably be inferred that if a knowledge of such products and their properties were more widely disseminated, and the products themselves made more get-at-able, good uses would be found for many of them; and materials, which are now very much in the way, would be naturally sought after as sources of profit and advantage. The initiative of such a work might well be undertaken by the authorities of the South Kensington Museum. The importance of the work would well warrant the formation of another department there,—somewhat similar to the Food Department,—a department where merchants and manufacturers could send samples of raw materials or refuse, for which a profitable use had not yet been found (articles in a perishable state always excepted); these samples to be exhibited, with a popular description of their chemical and other properties, and any other particulars of importance attached to them. Such descriptions should be published (by a bookseller) at a cheap rate, and samples of the materials themselves should be supplied to any person signing a guarantee that they required them for the purposes of experiment, on payment of a small fee to the curator of the department. Measures might be also provided for supplying country institutions and clubs with sets of specimens for exhibition, and giving them the power to supply individuals with samples, as at the chief museum. It cannot be contemplated that there would be any lack of supply; for producers and possessors of waste would gladly assist in carrying out any scheme calculated to convert incumbrances into marketable commodities.

ORVS.

CHURCH-BUILDING NEWS.

Metheringham.—The church of St. Wilfred, at Metheringham, has been re-opened, after undergoing alteration and enlargement. The alteration which has been made in the edifice is an enlarged aisle on the north side, by which means accommodation will be afforded for 100 more persons. According to the old plan there was room for 200. The church of St. Wilfred was restored about ten years ago, and the foundation-stone of the enlarged aisle was laid by the vicar on the 23rd of June. Messrs. Drury & Mortimer have been the architects; Mr. Green, wood, the stone-waller; Mr. Belton, stone-mason; and Mr. Atkinson, carpenter and joiner. It is a rather curious fact that the church of St. Wilfred was much damaged by fire—as the inscription on the buttress at the west end shows—and the pillars, which were of the Tuscan order, were rendered so irregular in height, that during the present alterations much difficulty was experienced in the efficient and symmetrical construction of the roof of the aisle. It is apparent that the fire so disintegrated the stone used for the tower as partially to pulverise it or reduce it to lime. That part of the church requires some

improvement. The stone which has been used for the new aisle has been given by Mr. Henry Chaplin, and is from his quarry at Blankney. The seats, which are moveable, are made of pine, and the open roof is of Memel timber. It is intended that the extra sittings shall be free. The cost of the enlargement of the church will be about 400*l*.

Cleator Moor.—The foundation-stone of a new church has been laid at Cleator Moor. Though the new edifice will possess room to accommodate 600 persons, 405 only will be provided for at first. It will consist of a tower, about 30 ft. square; a nave, aisles, and chancel with aisles,—one side designed for an organ-chamber, and the other arranged for a vestry. The total length of the church will be about 130 ft., and its width about 60 ft. The architects are Messrs. Cory & Ferguson, of Carlisle. The roofs will be groined in brick, and the whole of the church will be lined with brick of a straw colour, relieved with red brick, and the chancel floor will be laid with encaustic tiles of a simple pattern. The chancel is sub-divided into quadripartite vaults, groined with moulded stone ribs. The nave is spanned by a single pointed arch, the arches of the clearstory windows being groined horizontally into it. The aisles are sub-divided into bays by ribs in brickwork, springing from stone corbels; whilst the tower, which is to be used as a baptistery, is again of quadripartite groining, with moulded stone ribs. The main entrance and the chancel-arch have been made the leading features, and on these the chief ornament has been bestowed. The doorway is deeply moulded and recessed in four orders. The chancel arch, of stone 4 ft. in thickness, is moulded and wrought. A cavity will be left in the wall, and filled up with asphalt, as a protection from damp. The frontage towards Leconfield-street will be enclosed with a low wall, with wrought-iron railing and large double gates, which will form the principal entrance to the grounds. The work has been let to Mr. Elibeck, Galemire; the sub-contractors being, joiner, Mr. Weeks, Keeble Cottage; painter, plumber, and glazier, Mr. Holloway, Whitehaven; slater, Mr. Whitfield, Workington. Besides this church, an unpretentious parsonage-house is to be erected, and a considerable plot of ground walled in as a cemetery. The principal entrance will be from Leconfield-street. The site, which has been presented by Mr. Thos. Brocklebank, is at the corner of Leconfield and Crossfield streets. The estimated cost of the church is 5,000*l*.

Kensington (Liverpool).—The Bishop of Chester has consecrated Christ Church, Kensington. The new edifice is situate on the high road to Fairfield, and close to the Kensington Water-works, and is intended to accommodate about 800 persons. The cost of the work, together with the land, will amount to about 10,000*l*., a very large proportion of which was bequeathed by Miss Colquitt, of Liverpool, that lady appointing as her trustees the Dean of Ripon (the Rev. Dr. McNeill), the late rector of Liverpool, and Archdeacon Jones; 1,000*l*. were also contributed to the building fund by the Liverpool Church Extension Society. The church stands on an elevated position. It was constructed from plans furnished by Messrs. W. & G. Audaley, of Liverpool; the contractor being Mr. E. Hughes, also of Liverpool, builder. The foundation-stone was laid about eighteen months since. The building, which is Romanesque in design, consists of a nave, 91 ft. long, 24 ft. wide, and 57 ft. high from the floor line to the apex of the roof. The aisles on either side are 13 ft. 9 in. wide, and 90 ft. long. The choir and chancel conjointly are 32 ft. 3 in. long. The north transept is 19 ft. by 18 ft. The south transept is occupied as an organ-chamber and vestry. Externally the church is built of ordinary grey brick, with Stourton stone bands and red and black bricks in bands and arches. A tower is attached to the west end of the church. Its height to the top of the stone cornice is 103 ft., and from the roof to the top of the final seat 50 ft., giving a total height of 150 ft., with 20 ft. exterior width. It is intended to place a bell in the tower. On either side of the nave are five arches, each 17 ft. wide, and 20 ft. 6 in. high from the floor to the underside of the arches, springing from piers formed of red granite columns and polished, with Bath stone bosses, bands, and capitals, each capital being diversely carved. The roredos at the back of the altar is composed of ten arches formed of Caen stone, each arch resting upon a small column of green Irish

marble, and the credence is in harmony with this arrangement. The pulpit is formed of Caen stone with coloured inlaid decorations, and it rests upon a plain base of red stone. The font, at the west end of the church, is carved in Caen stone resting upon York stone steps. A larger number of windows than usual, including a large wheel window, have been introduced into the building—there being nearly fifty in all, the circular heads of which are in harmony with the special style of architecture. The eastern window is in three compartments, the glass being in alternate sections of square and diamond-shaped frames, the whole being relieved with a small quantity of coloured glass. The roof of the church is open-timbered. The altar floor, chancel, and wall round the font have been laid with encaustic tiles, supplied by Mr. Oppenheim, of Manchester. A hot-water apparatus has been furnished by Mr. Seward, of Lancaster. The artificial lighting of the nave will be effected principally by rows of three-light jets projecting from beneath the clearstory windows, whilst brackets of ten lights each, springing from above the capitals of the pillars on which the arches rest, will furnish lights for the aisles. Over the chancel are two large brackets with seventy jets. The gasfittings, and all the ornamental ironwork of the church, have been furnished by Messrs. Smith & Sons, of Birmingham. A stone wall, surmounted by an iron fencing, encloses the building on the north and west sides.

Chaldon (Surrey).—The ancient little church in this village is undergoing a process of restoration. The old-fashioned high seats will be replaced by seats of a new pattern. The workmen, in scraping off the old whitewash from the wall of the west end of the church, found that the wall had been, at some time or other, painted in distemper, with several figures, representing men and women. In addition to the improvement intended to be made in the interior of the church, the spire will be covered with oak shingles, under the superintendence of Mr. Saker, of Stout's Nest, the contractor for the job. The restorations are being done under the superintendence of Mr. Richard Martin, of Caterham, architect.

Arksey (Doncaster District).—About the end of April, 1869, Messrs. Anelay entered on their second contract for the restoration of the nave, the side aisles, and the porch of the ancient parish church, under Mr. G. G. Scott, architect, which contract has now been completed, and the edifice re-opened for divine service. The north-west aisle was the first commenced, and at the outset it was found necessary to foot and concrete all the foundations to the level of the ground. The north door which has been walled up some years, has been re-opened and restored to its original character, and the old coal-house adjoining pulled down and removed. The buttresses of the aisle which had given way were taken down, and after placing in new foundations have been rebuilt. Considerable portions of wrought jambs, window sills, &c., were discovered in the walls whilst making these repairs. From their appearance it is not unlikely that they belonged to the first side aisle which was built, being of the Early Decorated period. All the battlements and window tracery have been repaired, and where needed furnished with new mullions. The west end of the aisle has been fitted up with a new traceried window, taken from what is supposed to have been the original west end aisle window, a portion of which was found, and now forms a part of the new erection. The old roof of the aisle was all removed and repaired with new oak, and stained and varnished, and has since been re-covered with lead. The nave has also been furnished with a new high-pitched roof of oak to correspond with the old pitch of the tower. A new west end window with tracery, battlement, pinnacles, and buttresses, has also been added. While making these alterations in the nave there was discovered the original belfry doorway, which was opened out and repaired, the more modern one being closed up. In the south aisle modern one being closed up. In the south aisle all the windows have been supplied with new tracery, and some of them have been furnished with jambs, battlements, pinnacles, buttresses, &c., besides which all the ashlar has been re-paired. A cross, placed at the west end of this aisle was worked out of part of an old cross discovered in the foundations of the north aisle while the workmen were footing it. This cross was considered by Mr. Scott to be a portion of the original one. The old porch has been pulled down, and a new one built, the foundations

being concreted. The soil on the outside of the whole church has been removed to a certain depth, and a channel of hard black Staffordshire bricks has been laid in cement, in order to keep the building dry. There are also fall pipes round every side of the edifice, which conduct the water into small cesspools, whence it is carried by drains to the common. All the work has been executed under the superintendence of Mr. Thomas Stenton, the foreman. The cost of the entire restoration will be nearly 3,000*l.*, of which there are from 600*l.* to 700*l.* still to be raised.

Corton Denham.—The re-opening of St. Andrew's Church, at Corton Denham, near Sherborne, has taken place. The church has been completely rebuilt and enlarged, as the old building was in a very dilapidated condition, and was too small for the accommodation of the parishioners. The edifice, which is erected on the site of the old church, is in the Perpendicular style of the fifteenth century. It consists of a nave, north aisle, chancel, and vestry, with a tower at the west end. The walls are composed of Ham-hill stone, with Bath and Doulting dressings. The roof is open woodwork, stained and varnished, and the seats are open oak benches, with carved ends. The chancel forms an apse, and has a groined roof, supported by carved corbels. The chancel is paved with Minton's encaustic tiles. The pulpit is of Bath stone. The church is to be heated by a patent apparatus, and is well lighted and ventilated. The organ was built by Mr. Ewens, of Stratford-on-Avon, and cost 110*l.* The contract amounted to 2,350*l.*, but the extras will be fully 500*l.* more. The whole expense will be defrayed by Lord Portman, who is the principal landowner in the parish, and lord of the manor. The plans of the church were drawn by Mr. Pearce, architect, of the estate office at Haselbury. The contractor was Mr. Draper, of Crewkerne. The architect under whose superintendence the work has been carried out is Mr. Green, of Blandford, who designed the chancel roof. The masonry department was sub-let by the contractor to Mr. C. Trask, of Norton-sub-Hamdon. Mr. Holliday, of Wells, did the carving of the pulpit and font; and Mr. Boulton, of Cheltenham, was the artist who produced the work in the chancel.

Wettenhall.—The new church of St. David's has been opened for divine service. The church is situated at the side of the road leading from Banbury to Over, and is three miles from the Calveley station, on the Chester and Crewe line of railway. The style of architecture is a simple Gothic type of the thirteenth century. The building, which is cruciform in shape, and consists of nave, transepts, and porch, is of brick, with a little of the red stone from the old building, and white Kelsall stone sparingly introduced. The dimensions are:—from east to west, 67 ft. 5 in.; from the north to the south walls of the transepts, 36 ft. 5 in.; the nave being 14 ft. 4 in. wide. The entrance is by a small porch at the south-west end, and the interior is as unpretending as the exterior. The minister's vestry is in the arm of the south transept, while the choir will occupy the north transept. There is, perhaps, a surplussage of light; for besides the coupled windows of the nave, which alternate, we may remark, with plain chamfered buttresses, there are triple-light windows in the gable walls of the chancel, transept, and west end; and this effect has been heightened by the light stucco used for the walls. However, the clergyman and his congregation would, no doubt, gladly accept, in the place of the plain glass, memorial windows; and, as there is no elaborate tracery, but simple lights of lancet shape, the cost of stained glass would not be very expensive. All the sittings, which will accommodate 200 persons are to be free and unappropriated. They have been made of Savannah pitch pine, varnished, the wood being supplied at a nominal price to the builder by a Winsford tradesman. The roof, of high pitch, is open, the dark timber-work being relieved by ultra-marine straps, fastened with gilt-headed bolts. Exteriorly, the western gable is surmounted by a bell turret, and the other gables by stone crosses and iron finials. The architects were Mr. James Redford, of Manchester, and Mr. J. A. Davenport, of Over, near Winsford (the latter having all along taken an extra official interest in the work); and Mr. Peter Hodgkinson, of Sandbach, was the builder.

Plaitow.—The new Church of St. Andrew has been consecrated by the Bishop of Rochester. The building stands a little off the Barking-road. The style of architecture is Early English. The

length of the building, from east to west, is 180 ft., while from north to south it measures about 50 ft. It is built of Kentish rag and Bath stone, and is paved, the nave with Staffordshire and the sanctuary with encaustic tiles. Besides the nave, the roof of which is supported by four bays, finished with stone; there is a central tower, a south transept, and north chapel, while the chancel, which is 60 ft. long from the nave to the wall, finishes with an apse, the roof of which is almost dome-like in appearance. The reredos, presented by lady friends, is approached by nine steps from the nave, and is built of Bath stone, inlaid with mosaics, with detached arcading, divided into five compartments, the arches of which are supported by marble columns. The figures in the central compartment are those of the Saviour, St. Mary, and St. John, while the others contain different Scriptural characters. Clearstory windows are carried entirely round the church. Four windows in the north chapel, two in the nave, and one at the east end, are of stained glass, and one in particular is placed there to the memory of Miss M. E. Banks, who for a long time acted indefatigably as school-mistress. The font, which is the gift of the vicar of the parish, the Rev. R. W. B. Marsh, is composed of various marbles, and harmonises in design with the building. The seats are open benches, and are all free and unappropriated: accommodation will be given to 1,200 persons. The architect was Mr. Brooks, of Lincoln's-inn, and the contractor was Mr. Perry, of Stratford. The cost of the building, as it at present stands, is 10,000*l.* About 4,000*l.* more will be required to complete the tower and spire, which it is intended to carry up to about 220 ft.

Books Received.

"The Disposal of Town Sewage. By R. W. P. Birch, C.E. London: Spon." This is a reprint of a Millar prize paper read at a students' meeting in the Institution of Civil Engineers. In its pages are collected well-authenticated particulars of some of the chief undertakings already carried out, and their results,—the opinions of scientific men as to the probable effect upon the country of a considerable increase in the number of sewage-farms,—and a few notes upon the true theory of filtration and the self-purifying tendency of polluted streams.—"A Treatise on the Utilisation of Town Sewage. By James Duthie. Preston: Dobson. London: Simpkin, Marshall, & Co." The author of this pamphlet is clerk of works to the Preston Local Board of Health, and his treatise relates particularly to Preston. His scheme is illustrated by diagrams. It combines the irrigating, precipitating, deodorising, and filtering principles in one; and he believes that this combination of principles renders his scheme superior to all others; and that the investigations of the Rivers Pollution Commission must result in some such scheme.—"Report of the Streets Committee of the City Sewers Commission on the Val de Travers compressed Asphalt Carriage-way Pavement. Judd & Glass, Printers, Doctors' Commons." With this report is printed the report of Mr. Haywood, the engineer and surveyor to the Commission, on which the committee's report is based. The committee recommend the Threadneedle experiment to be extended in a line of street having great traffic. The cost will be 18*s.* per square yard, including concrete foundations; and for keeping in repair, 1*s.* 6*d.* per square yard per annum, the pavement to remain in as good condition as when first laid. Mr. Haywood states that the pavement is not slippery; that it is, perhaps, more noiseless under the traffic than stone flagging; is impervious to moisture; and can be swept like any other pavement. As to its durability, more experience is requisite. He wished for a more extended trial of the pavement.—"Railways and the Public. By Raphael Brandon, F.R.I.B.A. Seventh Edition. National Railway Association, 17, Clement's-inn, Strand." Mr. Brandon, who is the hon. sec. of the association, has been working hard to found his scheme of shilling, sixpenny, and threepenny fares throughout for long distances; and fourpenny, twopenny, and penny fares for ten miles and under, and he now publishes it condensed, in penny pamphlet form, giving more facts and tables. It seems that the Great Northern actually convey ticket-holders between London and Welwyn, a distance of twenty-two miles, at an average rate of less than sixpence all the way, so that they already do

what they declare they cannot do. This, too, is the case with other companies.—The *Rectangular Review*,—not a good title for a quarterly communication on philosophy, archaeology, science, and the arts,—has begun very well. No. 1 contains a considerable amount of agreeable and useful reading. The editor, however, must not let his writers talk about "a slight preventative." It proposes to pay particular attention to Freemasonry.—And this reminds us to mention a trade-book of "Masonic Clothing and Jewels," all coloured and gilded, issued by George Kenning, of Little Britain. The prices seem moderate. The illustrations provide for degrees not recognised by strict masons, such as Templars and Red-cross Knights: good authority for these decorations it would be difficult to find.

Miscellaneous.

The Suez Canal.—With regard to the Suez Canal, Sir D. A. Lange has furnished the following particulars relating to the traffic and receipts:—"The total number of vessels which have passed through the maritime canal is 363; of these 130 traversed during the four days of the inauguration, exempt from payment of dues, leaving 233 ships, representing 196,428 tons; when to this is added the tonnage of small craft, viz., 6,498, the total amount on which dues have been paid is 201,926 tons, composed as follows: 153 British ships, 134,712 tons; 35 French ships, 33,804 tons; 19 Egyptian ships, 12,760 tons; 9 Austrian ships, 5,948 tons; 7 Italian ships, 3,717 tons; 4 Turkish ships, 2,548 tons; 3 Spanish ships, 732 tons; 1 Russian ship, 480 tons; 1 Indian ship, 686 tons; 1 Chinese ship, 37 tons; total, 233 ships, 195,428 tons, including the fractional tonnage. The receipts in June amounted to 817,117*l.* (32,684*l.*), being nearly double those of the preceding month, and the total revenue derived from all sources, made up to the 30th of June, amounted to 3,244,616*l.* (129,784*l.*). Fourteen dredgers are at present employed in widening the "bends" and making such improvements as are deemed necessary for facilitating, in a still greater degree, the navigation through the canal, and obtaining a uniform depth of 26 English feet throughout."

The A B C Process.—After visiting the A B C Model Sewage Works at Leamington twice, the Rivers Pollution Commissioners report the following as their conclusions as to the merits of the scheme:—"1. The process removes a large proportion of the suspended impurities from sewage, but on no occasion, when we have seen it in operation, has this removal been so complete as to render the effluent sewage admissible into running water.—2. The A B C process removes a very small proportion of the soluble polluting matters from sewage. After treatment by this process, the effluent sewage is very little better than that which is obtained by allowing the raw sewage to settle in subsidence tanks.—3. The manure obtained by this process has a very low market value, and cannot repay the cost of manufacture.—4. The manipulations required for the extraction and drying of this manure are attended with a nauseous odour, especially in warm weather, and would occasion a serious nuisance if the works were situated in or near a town."

Lee, St. Peter's.—The rapidly-increasing population in this popular suburban locality rendered increased church accommodation necessary; steps have therefore been taken to build a new church. A temporary iron one has been in use for some time, but a site having been offered by the Crown and their lessees, Messrs. Gate, a committee was formed, and the new church, which is to be of brick, designed by Messrs. Newman & Billing, architects, will shortly be commenced. It is intended to provide, at first, accommodation for 700 persons, at a cost of about 4,500*l.*

A Wire Tramway in Scotland.—Lord Kinnaird is at present putting up "Hodgson's Wire Tramway," for the transit of blocks of stone from a quarry in Hiltown, a little north-east of Rosie Priory. The stone in this quarry is to be thus conveyed to a huge stone-breaking machine, driven by water, to be prepared for causeway and other purposes. The works are already far advanced. The Duke of Sutherland is to construct one of these tramways 10 miles long, to transport limestone from Loch Shin to Golspie Harbour.

New Process of Metal Casting.—A party from London, Manchester, and other places assembled lately at the works of the Lancashire Engineering and Compression Casting Company, St. Helen's Junction, to witness a new patent process of casting refractory metals. The invention is of American origin. The pattern is placed on an oiled foundation-plate, and besmeared with fine wet clay. It is then buried in a box with mixed clay and sand, which covering is pressed downwards until it assumes the consistency of an unbaked brick. In this state the clay cake is carefully removed from the box turned upside down upon a table, and the pattern adroitly lifted from the bottom by means of a small gutta-percha suction ball, leaving a distinct representation of itself in the vacuum so caused. After being sufficiently hardened in a stove, the moulds—for many can be operated upon at the same moment—are packed closely together in a large receptacle, which is made air-tight. The fused metal is then poured from the crucible into an easily-opened channel of this vessel, and forces itself into every crevice of the moulds, aided in its course by the action of a compressing machine. The moulds are next taken out into the open air, and broken with hammers, when there are found embedded in them a perfect *fac simile* in metal of the different objects originally used as patterns for casting. Even the most minute lines, such as may be seen in engravings or wood-cuts, are clearly reproduced. One casting can be used to mould another without any need for the retention of the original pattern. Medallion making, type casting, and file making are said to be among the developments of the invention. Finger-plates for doors were chiefly made on the occasion referred to.

Death in a Well at Repton.—Drowning in carbonic acid gas is just as frequent as ever, notwithstanding all that has been said about it. A man was recently engaged with others cleaning out an old well, at Repton. The well, as far as the water, was 64 ft. in depth, and the men had on several occasions found that there was a quantity of choke damp, as the light of a candle which they used was frequently put out. The deceased was let down by a rope, one end of which passed round several staves of a ladder, whilst another part went round a windlass. In the well was a flooring above the water, and the deceased was lowered on to it. He pulled up a portion of the old boarding, which was hoisted up, and a piece of new wood was let down in its place. The deceased continued at work for about half an hour, at the end of which he remarked, "This is a rum place to work in," and he was then asked if he might be pulled up, and he replied, "Yes." The men at the top then began hoisting him up, and when he had got within 12 ft. of the mouth he made a noise as if he was breathing heavily, and fell down the well. Another man was then let down to rescue him, but he soon began to faint, and had to be speedily lifted up again. In letting him down the precaution of having the rope fastened round his waist had been taken. The body was recovered about five hours afterwards, when, of course, life was quite extinct. At the inquest, a verdict of "Died whilst working in a well, by falling into the water," was returned.

Theatre Royal, Haymarket.—While Mr. Buckstone and the regular Haymarket company are delighting the provinces, an entirely fresh *troupe*, under the management of Mr. Coe, have taken possession of the "Little Theatre," and have revived, with very considerable success, Mr. Tom Taylor's excellent comedy, "The Overland Mail," and the late Mr. Talfourd's witty and amusing extravaganza, "Atalanta." Several new actors have been introduced to London, notably Mr. E. Arnot, an artist of evident ability; Mr. A. Wood, a low comedian; and Miss Edith Challis. We are bound to speak well of the whole undertaking.

School of Art for Birkenhead.—Taking into consideration the difficulties connected with the useful existence of a School of Art for some time past established in Birkenhead, Mr. John Laird, the member for that borough, offered to give 1,000 yards of land in Conway-street, and to erect a building at his own cost, if the friends of the institution would provide a maintenance fund and the requisite furniture, at a cost of about 1,100*l.* in all. The Committee of the School of Art have accepted Mr. Laird's offer, and promised to take immediate steps to fulfil his requirements.

Improvement of St. Paul's Churchyard.

At the last meeting of the Metropolitan Board of Works, a report was presented from the Works and General Purposes Committee in reference to the proposed improvement on the south side of St. Paul's Churchyard, by the removal of the unsightly railings, and throwing more space into the roadway; and it recommended that the Commissioners of Sewers of the City of London be informed, in reply to their further letter on the subject, that the Board see no reason to depart from their former decision, namely,—that they are not prepared to contribute towards the proposed improvement, as the same does not provide for the opening up for carriage traffic of the roadway on the north side of the cathedral. Mr. Saunders moved as an amendment that the Board should contribute 5,000*l.* towards this improvement, and the corporation of the city of London would supply the rest of the cost, amounting altogether to something like 25,000*l.* The amendment was negatived by a majority of 15 to 7, and the recommendation of the committee agreed to.

New Theatre for Hanley.—The old theatre at Hanley has now entirely disappeared, and the new erection is, we are informed, to be pressed forward as rapidly as possible. The projectors, as appears from the plans, have taken pains to provide means of ingress and egress, the width of the doorways taken together being equal to an opening of 23 ft. There will also be a communication between the gallery and the boxes, the opening of which, in case of a panic, would tend to break the force of a rush from the gallery, and enable some of the occupants to escape at the back of the theatre. The plans have been passed by the buildings committee of the Town Council, and the Mayor and ex-Mayor, with the borough surveyor, have engaged to watch the progress of the building in the interests of the public.

Destruction of the Reading Assembly Rooms.

The Reading Assembly-rooms have been destroyed by fire. On Sundays the rooms were used for religious services, and on Sunday night these were continued until about a quarter to nine o'clock, when the building was left in apparent safety. Shortly afterwards, however, the place was discovered to be in flames, and by half-past ten it was a mass of burning ruins. The roof of the building had fallen in by the time that the engines had got to work. The origin of the fire is unknown, although it is believed that it was owing to the gas.

Somersetshire Archaeological Society.

The twenty-second annual meeting will be held at Wincanton, on Tuesday, August 23rd, and the two following days, under the presidency of Sir William C. Medlicott, bart. Papers will be read in the Town-hall. On Wednesday there will be an excursion to North Cadbury, Cadbury Camp, Compton Church, and Mapperton; and on Thursday one to Temple Coombe, Stowell, Milbourne Wick Encampment, Milbourne Port, Henstridge, reaching Temple Coombe Station at seven p.m. The members are invited, by the president, to a luncheon at Venn.

Galignani's Hospital.—Messrs. Galignani, the proprietors of the well-known *Galignani's Messenger* published in English in Paris, having built a hospital in that city for the benefit of poor British strangers or residents, have generously offered the same to the British Government, together with an endowment for maintaining it in operation. This offer, however, the British Government has declined. All the expenses of the hospital are being defrayed by Messrs. Galignani.

Bells.—Messrs. Mears & Stainbank have recently hung in All Saints' Church, Youlgreave, a peal of eight bells, tenor 26 cwt., key of D, paid for by Mr. W. P. Thornhill, Stanton-in-Peak; and another peal of eight bells, tenor 18 cwt., key of E, in St. Alban's Church, Rochdale, at the cost of Mr. Jonathan Field, of Demster House, Rochdale.

Overflows of the Fleet Sewer.—The heavy rains have produced overflows in Farringdon-street and Bridge-street, which have inundated cellars and stores. Two or three of the main channels had been stopped for repairs. Engines of the fire brigade were used to pump out the water.

Land in London.—The freehold site of the Church of St. Mary Somerset, Upper Thames-street, occupying an area of 3,740 square feet, was last week sold by tender by Messrs. Fuller, Horsey, Son, & Co., for the sum of 10,200*l.*

Copper.—Day by day prices fall lower and lower, according to the *Mining Journal*. Chili bars have been sold at 65*l.*, the price, according to the average difference, compared with English, that they ought, and would have been at, if speculation had not forced them up beyond their relative value; therefore they are just brought to their proper level. Ores have declined 8*s.* per unit. There is a wide difference between buying and selling prices, and a great reduction would have to be made to effect large sales in any kind of copper.

Free Bridges.—The joint committee of the Metropolitan Board of Works and the City Corporation, appointed under the provisions of the Act of 1869 for freeing the Thames bridges from tolls, have already opened Kingston Bridge, and on Wednesday, in the midst of general rejoicings on the part of the inhabitants of Walton, in Surrey, on the south, and Shepperton, in Middlesex, on the north, side of the Thames, Walton Bridge was thrown open and declared henceforth free of toll.

Dressing Stone.—The invention of Mr. L. Pochet, Vendome, France, consists of an apparatus containing a striking or picking tool, and weighing from 30 to 100 kilogrammes, or more, according to the force of the blows desired to be struck, the said tool being worked either by steam or compressed air, and suspended in any suitable manner, so that the workman can easily direct it upon the stone to be cut, without using his own muscular power either to guide or support the machine.

Explorations of the Deep Sea.—The last published number of the "Proceedings of the Royal Society" (Vol. xviii., No. 121) contains the "Preliminary Report of the Scientific Explorations of the Deep Sea in the *Porcupine* during the summer of 1869," conducted by Dr. Carpenter and others. To the council of the Royal Society belongs the credit of having led the Government to give the assistance without which these important investigations could not have been pursued.

The Maryport Roman Altars.—It was believed that the red sandstone of which these altars were composed was got from the rock at Maryport, close to the site of the old Roman station; but a working miner, named Hodgson, has discovered that they must have come from an ancient quarry at Sheep Field, on the Allerby Hall estate, Aspatria. The stone is said to be identical, which is not the case with that at Maryport. The quarry was an extensive one, and the remains of ancient tools have been found.

The Art Challenge Accepted.—It is announced that Mr. Hughes's challenge to paint "the best picture, against time, for 1,000*l.* a side, with any artist of any country," has been accepted by an American artist, and that he, as well as the challenger, has signed the preliminaries and deposited 1,000*l.* in the Bank of England for the match, to come off, on or about the 13th inst., in the saloon of the Palais Royal, Argyll-street, Oxford-circus! Who is to decide whether the things produced are pictures or not?

The Carlisle School of Art.—The Mechanics' Hall, in this city, has been fitted up for the accommodation of the students of the local School of Art. About a hundred students passed through the Carlisle School of Art last year, and we are glad to observe that under the training and direction of Mr. Herbert Lees, the master, they spent their time to such good purpose, that two of them succeeded in obtaining prizes in the national competition.

The Grosvenor Gallery.—The Marquis of Westminster, who is just now doing all sorts of liberal things, has allowed the authorities of the South Kensington Museum to select for exhibition any pictures from the Grosvenor Gallery, for which space can be found. Many of the finest works have been accordingly removed, and will be exhibited in a few days.

Monumental.—The Metropolitan Board of Works have agreed that permission should be given to place a statue of Sir James Outram on the Thames Embankment.—Her Majesty has assented to the proposal of the House of Commons, that sufficient gun-metal for the making of a statue to commemorate the services of Field-Marshal Lord Gough, should be granted, the House making good the cost of the same.

Royal Architectural Museum.—The Goldsmiths' Company have voted a donation of 25l. for the building fund of this Museum.

TENDERS.

For alterations and repairs at No. 72, Baker-street.
Mr. H. Saxon Snell, architect:—
Simpson £212 0 0
Phillips & Baker 213 5 0
Bird 201 10 0
Bamford & Son 201 0 0
Howard 197 10 0

For sewerage, paving, and flagging main street, Rotherham. Mr. George Jennings, surveyor:—
Moore £3,666 3 0
Ripley 3,460 8 8
Speight & Sons (accepted) 3,451 19 3
Chadwick 3,330 5 7

For house in Harestone Valley, Caterham, for Colonel Sibley. Mr. R. Martin, architect. Quantities supplied by Mr. Frederick Sparrow:—
Dove, Brothers £2,215 0 0
Hearle 2,085 0 0
Langmead & Way 2,067 0 0
Jarrett 2,040 0 0
Turner & Sons 2,039 0 0
Chappell 2,037 10 0

For excavating and building brick tank at the Gas Works at Barking, Essex. Messrs. Church & Son, engineers:—
Hill, Keddell, & Waldram £1,396 0 0
Doora 1,158 0 0
Holmes 1,090 0 0
Wood & Son 1,084 0 0
Aird & Son 1,080 0 0

For rebuilding shop and premises, High-street, Woolwich. Mr. Dinwiddie, architect. Quantities supplied:—
Penn £433 0 0
Richardson 410 0 0
Swain & Hall 410 0 0
Wood 390 0 0
Pearson 284 0 0

For boundary walls and additions to Fulham Convict Prison. Quantities supplied by Mr. T. Nixon:—
Taylor & Pitts £4,463 0 0
Patman & Fotheringham 4,164 0 0
Foote 4,131 0 0
Nixon & Son 4,100 0 0
Aves & Co. 3,988 0 0
Gammon & Sons 3,925 0 0
Holland & Hannon 3,884 0 0

For construction of reservoir, laying main pipes, &c., for supplying the town of Dolgeley with water. Mr. Thomas Roberts, engineer:—
Jones £1,584 0 0
Ellis 1,485 14 9
Jones & Lewes (accepted) 1,445 0 0

For the erection of Holy Trinity Rectory, Newington, Surrey. Messrs. Henry Jarvis & Son, architects:—
Shapley & Webster £1,885 0 0
Baguley 1,787 0 0
Colls & Son 1,797 0 0
Downs 1,793 0 0
Henshaw 1,762 0 0
Thompson 1,760 0 0
Tarrant 1,743 0 0
Marland & Sons 1,735 0 0
Shepherd 1,730 0 0

For alterations, repairs, painting, &c., at No. 5, Portland-place, for Mr. Robert Gosling. Mr. Thos. William Tobin, architect. The quantities were supplied by Mr. Chas. Bradley:—
Tyler & Lewellen £1,963 0 0
Batchelder 1,957 0 0
Longmire & Burge 1,669 0 0
Clark & Manoch 1,470 0 0
Brown 1,447 0 0

For alterations to the "Yorkshire Grey" Charlotte-street, Fitzroy-square. Messrs. Bird & Walters, architects:—
Watson Bros. £234 0 0
Newman & Mann 526 0 0
Henshaw 495 0 0
McLellan 473 0 0
Sprake 471 0 0
Brown 450 0 0
Williams & Son 437 0 0
Saunders 455 0 0
Kelly (withdrawn, error) 383 0 0

For alterations and additions to Stoke Prior Mills, near Bromsgrove, Worcestershire, for Mr. W. H. Wall. Mr. W. Seckham Witherington, architect:—
Charley £1,462 10 0
Lovatt 1,015 7 10
Wood & Son 736 10 0
Neison 726 0 0

For works, Portman Chapel, Baker-street, Portman-square. Mr. C. Eales, architect:—
Clemence £7,399 0 0
Holland & Hannon 6,393 0 0
Ebbs & Sons 6,230 0 0
F'Ansou 6,127 0 0
Scriveners & White 6,121 0 0
Kelly, Brothers 6,063 0 0

For proposed Athenaeum Club, Camden-road, Holloway, for the Committee, including boundary wall, gas-pipes, and fireplaces. Mr. R. Washington Hart, architect. Quantities supplied by Messrs. Maples, Brothers:—
Williams £3,400 0 0
Kelly, Brothers 3,190 0 0
Knight 2,920 0 0
Atkinson & Walker 2,908 0 0

For building a house at East Peckham, Kent, for Mr. Tompsett. Messrs. Habershon & Fite, architects:—
Tonbridge & Derry £1,789 0 0
Bond 1,690 0 0
Martin 1,635 0 0
Boddes & Roberts 1,675 0 0
Howler 1,600 0 0
Pearce, Brothers 1,554 0 0
Patman & Co. 1,645 0 0
Nightingale 1,615 0 0
Perridge 1,420 0 0
Whittaker 1,276 0 0

For execution of subsoil drainage works at Bromley, in Kent. Mr. Arthur Jacob, engineer:—
Marshall £1,500 0 0
Harris 1,297 0 0
Batch 1,198 0 0
Chamberlain 988 10 6
Hayward 967 0 0
Woodcock 943 0 0
Cab 919 10 0
Young 899 0 0
Lansbury (accepted) 775 10 0
Carter 757 0 0

For the erection of stables and alterations in the rear of the Gate-house, Highgate. Mr. W. E. William, architect. Quantities not supplied:—
Marr £425 0 0
Southcott & Co. 378 10 0
Kerry 372 0 0
Wood 270 0 0

For the erection of a dwelling-house, bakehouse, coach-house, stables, and offices, for Mr. Kitchen, at Potton, Beds. Mr. John Usher, architect. Quantities supplied:—
Grey £1,095 18 0
Curvin 1,019 0 0
Joy & Carter 975 0 0
Corby & Son 939 4 0
Haynes 910 10 0
Young & Son 899 0 0
Norman 883 0 0
Field 874 12 0
Brown 872 15 10

For alterations and repairs at Bury Maple Farm, Ash, Kent, for Mr. Moulton Lambard. Mr. John Jeffkins, architect:—
Yates £415 0 0
Banks 363 1 0
Grover (accepted) 333 4 0

For new front and other works to be done at No. 126, Curtain-road, and at warehouse, William-street, Shore-ditch, for Mr. Thomas Miller. Mr. William Mundy, architect:—
Chessum £960 0 0
Brown & Sons 955 0 0
Higgs 955 0 0
Blackmore & Morley 935 0 0
Goodman 887 0 0

For the restoration of St. John's Church, for the Churchwardens and Committee of the Vestry of Bethnal-green. Mr. William Mundy, architect. Quantities supplied:—
F. & F. J. Wood £4,376 0 0
Higgs 4,170 0 0
Larke 4,147 0 0
Blackmore & Morley 3,991 0 0
Brown & Son 3,750 0 0
Conder 3,699 0 6
Scriveners & White 3,684 0 0
Eaton & Chapman 3,637 0 0
Sewell & Sons 2,453 0 0
Hill, Keddell, & Co. 2,266 0 0
King & Son 2,264 0 0
Ennor (accepted) 2,275 0 0

For re-seating Wilton Church, Taunton. Mr. T. H. Spencer, architect:—
Fox £189 0 0
Spiller 178 0 0
Davis (accepted) 170 10 0
Giles 170 0 0
Shewbrooks 162 0 0
Yandell 158 0 0
Hartnell 159 0 0

For St. Paul's Schools and Teacher's Residence, St. Leonards-on-Sea. Messrs. Jeffery & Skiller, architects:—
Thomas £2,465 0 0
Parks 2,130 0 0
Hughes 2,125 0 0
Nightingale 2,057 0 0
Rodda 1,999 0 0
Smith (too late) 1,995 19 10
Howell 1,939 0 0
Bridgland 1,906 0 0

For school house and boundary walls, at Long Benton, Northumberland, for the Building Committee. Mr. C. T. Whitley, architect:—
Nicholson £1,180 0 0
Foster 1,113 15 0
Middlemass & Stafford 1,050 0 0

For erecting a villa residence at Hendon. Messrs. Salomons & Jones, architects:—
Earber & Groomer £3,590 0 0
Fish 2,905 0 0
Richards 2,870 0 0
Jackson & Shaw 2,614 0 0
Cooke 2,580 0 0
Sharplington & Cole 2,555 0 0
Nightingale 2,525 0 0
Heath 2,458 0 0
Bowles 2,125 0 0

For the erection of stables at St. John's Wood. Mr. K. H. Collins, architect:—
Perry & Co. £2,674 0 0
Merritt & Ashby 2,696 0 0
Ebbs & Son 2,579 0 0

For farm house and homestead on the estate of Mr. Harcourt Griffin, at Knighton, near Market Drayton. Mr. Nicholas Joyce, architect:—
Espley (accepted) £1,877 0 0

Great Northern Railway.—Mr. Firbank, of Newport, Monmouthshire, who constructed the principal portion of the London end of the Midland Extension, has taken the contract for the Great Northern Railway, Sleaford to Bourn, seventeen miles in length.

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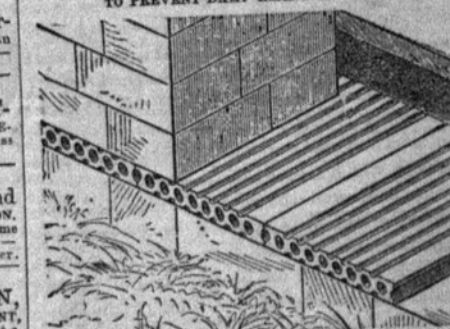
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The Builder.

VOL. XXVIII.—No. 1436.

The Wellington Monument for St. Paul's.



has been made upon two professional men, one of whom occupies the honourable and important post of surveyor to the Dean and Chapter of St. Paul's, while the other was selected, in the year 1858, to execute the monument which it was then determined to erect in that cathedral, at the national expense, in honour of the great Duke of Wellington.

Readers of the *Builder* will remember that we have on several occasions blamed Mr. Alfred Stevens, the sculptor, for the slowness with which the work proceeded, and urged him to a straightforward explanation of the causes that had led to it. We are not surprised, therefore, at a movement on the part of the First Commissioner to obtain the fulfilment of Mr. Stevens's undertaking, but we certainly are, at the shape which it has taken.

Every one, even the most obvious and self-convicted criminal, is entitled, by the courtesy of our law, to be held innocent till proved guilty. Neither can he be proved guilty by an investigation conducted like that of the Holy Inquisition, or of the police of King Ferdinand of Naples—*à son insu*—behind his back. It was not fair to hold up Mr. Penrose and Mr. Stevens to public reprehension, if only for a few hours, in the guise of convicted conspirators against the public purse—for to no less does the charge amount.

For nearly eighteen years we have been without a sepulchral commemoration of our great defender. It would almost seem as if the monument was doomed to remain unfinished, so long as the shadow of that eagle, which he had not only chained, but, as he thought, for ever banished from Europe, was still causing an armed and doubtful peace, almost as intolerable as war.

It is impossible to glance at the correspondence without observing the absence of that precise and definite method of business which the conduct of a work of that importance imperatively demands. We find that a sum of 20,000*l.* having been voted for the erection of a monument to the Duke of Wellington, the Assistant Secretary of the Office of Works, on the 9th of September, 1858, authorised Mr. Alfred Stevens to proceed in the preparation of a full-sized model, "as to the composition of the design" of which he was left "entirely unfettered."

The model was to be placed in the Chapel of the Cathedral formerly used as a Consistory Court. The cost of the monument, if executed according to the model, was not to exceed the sum of 11,000*l.* Mr. Stevens, whose design had been sent in to meet the stipulated sum of 20,000*l.*, writes, on the 9th of October, "that the cost of a monument in accordance with the selected design would be considerably in excess of the sum named above." He says that he should "be prepared to complete the work, of

which I am about to commence the model, for the sum of 14,000*l.*," and on this the contract rests. The sum named, let us say at once, was greatly too little for the work proposed, and this unwise reduction, made greater by the cost of the large model required, was the cause of the trouble that has followed.

On the 19th of November, 1858, Mr. Penrose writes to the Office of Works to say that Mr. Stevens has incurred considerable expense, and has prepared the skeleton frame of the model, and he recommends the payment to him of 400*l.*, "according to the terms of the letter addressed to Mr. Stevens from the Office of Works, on September 9th ult., respecting the said model."

With the exception of a letter of the 30th of November, 1858, from Mr. Penrose, as to raising the cost of the monument, from 11,000*l.* to 14,000*l.*, we have no further information on the subject for two years. Up to this date, as far as documents go, no time is specified in which it is to be completed.

On the 28th of November, 1860, appears for the first time anything approaching to a specification for the monument. This comes in the form of a report from Mr. Penrose, which states that 1,600*l.* have been advanced to Mr. Stevens during two years.

Seven letters follow, to the general effect that Mr. Stevens is not getting on with his model. In the eighth, on the 6th of December, 1862, Mr. Stevens writes to say that, owing to the inadequacy of the advances made to him, which incidentally are stated at 2,200*l.* (instead of 6,400*l.* to which he was *primâ facie* entitled under the terms of a letter of the 9th of September, 1858), he has been compelled to give much of his time to further commissions. He offers to complete the model within fifteen months from the time when he shall receive 2,466*l.* more,—a sum which would make up one third of 14,000*l.*, the price of the monument when completed, and which proportion is ordinarily received by sculptors on receiving a commission, and before beginning work.

Mr. Penrose, on being applied to, recommends the payment, on the score of the ordinary custom of payment to sculptors, and states some of the difficulties with which Mr. Stevens has had to contend in the execution of a work for which there is no very good precedent in the country. In February, 1863, the sum of 2,466*l.* is paid to Mr. Stevens, who on this agrees to have his model complete within fifteen months; but by June, 1864, this promise is not redeemed, and in that month, in August, in March, 1865, and in February and March, 1866, recur letters of complaint from the Office of Works.

On January 17, 1867, we have extracts of a letter from Dean Milman (to whom is not stated), giving a qualified approval of the design hitherto left to Mr. Stevens's "unfettered judgment." Now, for the first time, occurs the suggestion that it should be worked out in "rich marbles." Mr. Stevens says that it was proposed by the Office of Works that Derbyshire alabaster should be used, a substance of disproportionately smaller cost than the beautiful Carrara marble now actually provided; but as to this the Blue Book is silent. The extract from the Dean's letter shows the incredible looseness of the whole transaction; nor is there a single word, to this date, to intimate that Mr. Stevens should employ "rich marbles" for the purely architectural part of his design. At this date, it first appears that an order is given for the actual monument. No specification is drawn up; no time is fixed for completion; but in March, 1867, 2,800*l.* further are paid to Mr. Stevens; and in October, 1869, a further sum of 2,200*l.* is recommended for payment. On the 20th of December, 1869, Mr. Penrose furnishes an estimate of the cost of the monument, for the guidance of the Board of Works.

On the 29th of December, 1869, Mr. Penrose addresses a long letter to the Secretary of the Office of Works, summing up the history of the case, pointing out that it had actually been left to Mr. Stevens himself to decide on details of his monument which had so much influence on its actual cost, and that the expense of preparing a full-sized architectural model, a quite unusual procedure, had never entered into Mr. Stevens's calculations. On this follows some rather sharp correspondence, and a report, signed Douglas Galton and Henry A. Hunt, to the effect that the expenditure to date has been 17,900*l.* (including work in chapel done by other artists), and that, to complete the monument, a further sum of 15,000*l.* will be required. And then come the letters to Mr. Penrose and to Mr. Stevens, dismissing both, which have already been made public.

Thus far as to the facts of the case, as they appear from the Blue Book. As to the actual condition of the monument, all the architectural work is either fixed or "ready to be taken to St. Paul's." With regard to the part actually fixed, comprising the basement, columns, and entablature below the arch, it is a work of rare richness and beauty of execution. We can personally bear witness that the work actually in the cathedral is of admirable design, faultless marble, and patient and finished workmanship. The rich effect of the columns, covered with an embossed diaper; of the capitals, which are of an original design; and of all the delicate mouldings of basement, and frieze, and cornice, it would be hard to rival. Messrs. Galton and Hunt say that "much remains to be done in preparing the models and moulds for casting, which must be the work of a sculptor." For this last step of the sculptor's work, the casting, the reporters allot the sum of 12,500*l.* Mr. Stevens states that he has a tender for the casting at the sum of 3,500*l.*, and that, in an estimate which he was asked to give of the sum requisite for the completion of the monument, he put down 6,500*l.* for the completion of this part of the work, including all contingencies and responsibility. It does not seem that any justification exists for doubling this sum in the Board of Works' estimate. Moreover, as we understand, Mr. Stevens admits his obligation to complete the monument for the original sum, and is ready to do it, if insisted on.

It is very much to be regretted that so loose and ill-defined a contract should have been entered into by either party. Mr. Stevens can not escape the blame of having allowed a long time to elapse since the commencement of the work. On the score of workmanship, so far as the marble is concerned, there is only room for admiration. No reply can be more conclusive, to any reflections such as have been thrown on these two gentlemen, than the fact that they have neglected to take proper care of their own pecuniary interest. Mr. Penrose has not received a single penny for all his trouble in the transaction. Mr. Stevens is, as he says, and as we can well believe, out of pocket. A valuation of even the work done, made by a sculptor of proper standing, would show that the nation has already an equivalent for the sum paid: so that we have not wasted our money, and the valuation would moreover, if carried further, convince the nation that the monument, if finished equal to the parts already done, would be very cheap at the sum originally named, 20,000*l.* It is 40 ft. high, and includes, besides all the architectural portion with large marble columns having ornamented caps and bases (the shafts elaborately covered with oak-leaves), a sarcophagus of remarkable richness supporting a recumbent statue, two colossal groups of figures above, and an equestrian statue of the duke at top.

As we have already said, Mr. Stevens has laid himself open to just reproof for delay and miscalculation, but it must not be visited on

him too severely: it was the delay of over-fastidious care; the miscalculation of an artist anxious for the opportunity to produce a noble work. The monument, once finished successfully, no one will ask how long it was in hand; and the only way to have it so finished is to allow Mr. Stevens, under proper guarantees, and with a reasonable advance on the amount of the original contract, to proceed with the work. We have strong confidence that if this course be pursued, we shall obtain a monument worthy of its object, and of which the country may be justly proud.

SANITARY APPLIANCES IN TIME OF WAR FOR TROOPS IN THE FIELD AND FOR THE CARE OF THE SICK AND WOUNDED.

ACCORDING to official announcements, both the French and German armies enter this campaign with "full and complete sanitary appliances." We, however, know by sad experience in our army what red-tape assurances are worth. The army of the Northern States of America were also (officially) "fully prepared for all contingencies." The then president (Lincoln) considered that "a sanitary commission would be of about as much use to the Northern States army as a fifth wheel to a coach." The good Abraham Lincoln, however, lived long enough to regret this joke. The people of America voluntarily undertook to furnish a sanitary commission, and right nobly did the members of this commission fulfil the duties of their self-imposed task.

Officialism is the same at all times and in all countries. "How not to do it" is a lesson readily learned and easily practised. The British army before Sebastopol, when in its worst state, was officially, "perfect in all respects." The lady nurses were "an offence," and the sanitary commission was "a gross insult." The quiet, enduring, and unobtrusive work of the lady nurses told at once on the sick and wounded men in hospital, and a sort of official muzzle was applied to the obstructives from head-quarters; but this did not enforce cordiality. The ladies could, however, only see their work ever present before them in all its misery, and now and then, in intervals of repose, feel the official snubs intended. The sanitary commission, having an official standing, could work independently of subordinate cold-shoulder, though the disposition to give this was both seen and felt. The awful destruction of human life in the field and in the hospitals was with these men "quite according to rule;" it was "inevitable." As human nature is the same in all nations, and as officialism is necessarily conservative, bound up with regulations, we will make our appeal to the voluntary sanitary corps now being organised. We venture to predict that the army sanitary arrangements for the proper care of the sick and wounded will break down in the face of the contingent epidemics and slaughter. The sick and the wounded will be over-crowded, and ventilation will be neglected. Scavenging and lime-washing, with a use of carbolic acid for disinfection, will consequently be of the greatest use. Let us plead that these things may be attended to at once and continuously. Churches and public buildings with the windows out, barns, open sheds, and temporary shed shelter, where the free air of heaven can play over the poor prostrate sick and wounded, will do more than medicines. Lime-washing, disinfecting, and surface-cleansing, will give relief and work wonders. The tendency to overcrowd will be very great; the poor sick and wounded will be laid side by side as close as possible. Those who have ever had to attend one sick person labouring under a foul sore in a room, or who have visited hospital-wards when full, know what sort of atmosphere there will be. Fresh air means change of air, constant motion over the prostrate sick and wounded,—change in abundance,—such change as would be obtained beneath a large railway shed with side protections 6 ft. or 8 ft. in height, but all above up to the eaves open. Cleansing means a full and proper sweeping up and removal, day by day, of all matter liable to become corrupt. The carbolic acid disinfectant will stop decomposition and diminish the terrible plague of flies, which so torment the sick where the emanations from dirt prevail. If a moiety of the money collected, and to be collected, to aid in nursing, is expended in ventilating and cleansing, the results obtained will be

greater, and consequently more satisfactory. Water, pure water, for sick and wounded, is of the greatest importance. This water should not be stored within the wards of any hospital, as the gases of impurities are absorbed and render such contaminated water poisonous. Let the water be stored outside. In a land of vines there will be wine-casks.

Surface trenching, so as to throw off surface water, should be attended to; and external latrines should be provided for all who can use them. In a district where wood-charcoal is used it may be remembered that waste charcoal dust is a powerful disinfectant.

At the risk of tautology, we must repeat that pure water, fresh air, and daily surface cleansing, will be most required for the sick and wounded of the armies in the field.

THE CONDITION OF DUBLIN.

ONE section of the Irish press says that we have in our recent articles on the condition of Dublin dealt rather harshly with the corporation, and that our remarks in general were too severe. On the other hand, the fairness of our observations is acknowledged by several of the journals. One writes,—“The articles in the *Builder* on the condition of Dublin are good, and true in all points.” The *Irish Builder* says,—“The Condition of Dublin” is the heading to a well-written paper in the columns of our esteemed contemporary the *Builder*. There is very little in the statements made by the writer to which we can take exception. The supineness of our citizens and corporation is dwelt upon in no measured or disguised terms.” We have certainly not measured our censure, or disguised the fitting terms that were needed to be used in condemnation of corporate neglect.

We boldly assert then, without fear of denial, that Dublin at present is not half cleansed; and, as we will make no loose assertion, we shall point out some of the districts where corporate vigilance can never be detected. In the Earl of Meath's Liberties, the Ocombe, New-street, Patrick-street, and many of the adjacent streets, courts, lanes, and alleys, around the quarter. In the North Dublin district we might instance Church-street, Bow-street, Mary's-lane, King-street, Brunswick-street, Pill-lane, Barrack-street, Strand-street, and sundry and several other streets between the line of Capel-street and Oxman-town. We have walked through these quarters, and examined the house property, questioned the dwellers as to their wants, and during our visit seen sufficient with our own eyes to justify every word we have written or may write. The corporation of Dublin imagine that if they sweep a few leading thoroughfares, like Sackville-street, Dame-street, Westmoreland-street, and the squares, they may do as they please elsewhere,—that they may levy rates and taxes, and laugh down the complaint of the less opulent inhabitants and ratepayers. This system of polishing the front of the boot, while leaving the heel to retain its old dirt, may pass muster in the regions of the blind, where the one-eyed are kings; but it will not do in these sanitary times; so we advise the city authorities that their ostrich-like wisdom will not avail them much. The county Dublin farmers and market-gardeners' men are the city's best scavengers. Were it not for the quantity of city refuse, exclusive of mere stable manure, that these men carry out into the country, Dublin would be a hot-bed of fever and infection.

Municipal councils have many ordinary and specific duties devolving upon them to perform, but of late years, in Dublin, these duties are either purposely lost sight of, or altogether ignored. The lord mayor's duty of looking after weights and measures is performed yet but on a limited scale. To punish the dealer in light weight is a commendable act, but we are sorry to say that the working poor of Dublin are cheated to an enormous extent by dishonest tradesmen using light weights and measures. If those who require a licence to carry on their trade, ran the risk of forfeiting it by being caught in the act of using light weights and measures, a salutary lesson would be taught, and the robbers of the poor would be properly punished. The question whether the city police should be under the control of the Irish executive, or be a force amenable to, and managed by, the corporation of the city, is a moot point. We fear much that there would be nothing attained by the change, the city council is so

often at loggerheads with itself, by the charges and counter-charges of its members. We think it is better that the head of the police department should be in the castle than in the city hall. It is still the same in Dublin as when O'Connell spoke, and Lady Morgan sang,—

“Where men are fighting for conciliation,
And hating each other for the love of God.”

Many improvements that it would be desirable to have carried out are hanging fire at present. Neighbourhoods are sinking lower and lower, north and south, for want of proper outlets and leading thoroughfares. One great crying shame is the want of a direct route from Stephen's-green, or that quarter, to St. Patrick's Cathedral. Here is a costly architectural pile buried in the lowest and meanest quarter of Dublin, hemmed in on all sides by low and dilapidated tenements, forgotten almost and unvisited, because the road to it is tortuous, and through dingy bye-streets. By a very little amount of energy, and an avoidance of any serious expenditure, a new street could with facility be constructed, leading direct from York-street, across Angier-street, Whitefriar-street, and thence, with a slight curve (entailing only the demolition of a small number of houses of no great value), to St. Patrick's Cathedral. This route would give a line of communication nearly direct from Stephen's-green to Patrick-street, and open up a neighbourhood sorely in need of trade, light, and air, and other sanitary requisites. The new street formed by the carrying out of this measure would be the pioneer of future improvement in that part of the South Dublin neglected quarter, and it would lift the lorn and woe-begone “Liberties” from a region of eclipse into a region of light.

We wonder how long the railings in front of Trinity College will remain an “obstruction” to public traffic? They are regarded as ornamental by some, but we consider that in their present dimensions they neither are, nor have ever been, either ornamental or useful. Well, we must qualify; they are useful at either end, where recesses afford room for a select number of hereditary apple-women, who have held a freehold for themselves and their stalls from time immemorial; but with this honourable exception in their favour, there is no excuse why they should not be at once swept away, or curtailed to a few feet in front of the college. Speaking on this matter, we may also point out that the removal of the dead wall along the line of College-street would be a decided improvement. Why this dingy portion of the college, bounding on the north, should be allowed to stand for upwards of a quarter of a century after its counterpart in Nassau-street has disappeared puzzles us to answer. The sooner that a base of granite, with a similar ornamental railing to that on the south, replaces this dead wall the better.

The old city graveyards require overlooking, for they are in a bad state. Many of the most noted of them are situated in the old, neglected quarters of the city, surrounded by a thickly-crowded population, at a distance from a green field, a free common, or a free park. They might be laid out with taste and made attractive for the poor to walk through, instead of being kept barred up, yet still visible, in all their original repulsiveness.

The fine public squares of Dublin should not exist as a monopoly, but should be thrown open, like those in the French capital. No fear need be entertained, that if free to the working classes outrage would result. The parks of London are free to all, yet neither flowers nor shrubs are destroyed. Dublin, it is true, can boast of one magnificent park, which, for extent, has no equal in Great Britain; but the Phoenix Park is outside the city, and is a park which, in its management and control, is open to objections. It is a great boon, however, to have such a free park on the borders of the city, and to its existence we are certain Dublin is much indebted on the score of health and delight.

There are some manufactories scattered through the city which are prejudicial to the health of the population. We do not desire to allude to them by name, for our motive is not to lead to individual injury, but collective good. It is impossible, however, to effect a sound sanitary reform in a poisonous atmosphere. If human beings have to live and breathe in homes that are enveloped from chimney tile to threshold in sulphurous smoke, and cut their daily meal over open and reeking drains, where city and shamble sewage seethe—what can be expected but disease? If the water that is drunk

by the poor is poisoned, and if their sleeping apartments are placed above normal cesspools, civilisation must soon find an exodus, though man retains a home.

The cry of "vested interests" is all very fine, but neither law nor divinity has a right to sanction the commission of crime; neither will the plea that Mr. So-and-So is a large employer of labour suffice to excuse the retention of any works in the heart of a locality where their existence is fatal to human life.

When we view things in this light—and it is the fair way in which to view them—we are forced to apply the same line of reasoning to public bodies.

If an individual (and we have noticed many recent instances) is held to be amenable for endangering the lives of the inhabitants of his neighbourhood by the carrying on of certain works, and by the existence of a certain nuisance resulting therefrom;—if such persons can be prosecuted and fined, and in a grievous case his works ordered to be removed,—why should the law allow a number of individuals, even though in a corporate capacity, to kill and slay as they please by a like method?

This the corporation of Dublin has been doing for a number of years; and the crime has culminated at a point where they should be arraigned and made to answer for their neglect.

To sum up the question, the Liffey, for two miles of its length through the heart of the city, is a moving bog of unutterable filth; the sewers everywhere north and south are insufficient or choked up; the rainpour remains on most of the streets in pools until it is converted into mud by vehicular traffic; and what should be surface drainage goes down through the street-gratings and traps in the consistency of plasterers' "floating stuff." This no doubt saves scavenging, horses, and carts, and allows the corporation at their quarterly meetings to vote fresh supplies for tearing up the public sewers, which their own bad management or that of their employees wantonly destroyed.

We now take leave of Dublin for the present. We have only slightly touched upon her wants and impartially dealt with local evils. Nature has favoured her with natural resources and natural facilities. Bleat with a splendid bay, graced with (what might be) a noble river, rich in mineral resources, with a granite bed sufficient to rebuild London, and latent veins of lead, iron, and coal, capable of revolutionising a hemisphere—with all this wealth, Dublin is all but sepulchred. The children of her bosom have left her in dirt and rags.

Since the above was written we find that the Government has consented to lend the citizens of Dublin 300,000*l.* for the purpose of carrying out a system of main drainage and the purification of the Liffey. Let us hope for greater energy and promptitude than have been apparent in some other works, or the Greek Kalends will arrive before the main drainage of Dublin is finished and the purification of the Liffey effected.

MORTUARY AT BOW.

A PUBLIC mortuary and post-mortem room has at length been erected by the Vestry of St. Mary, Stratford, Bow, in the churchyard of that parish.

The plan of Messrs. Hills & Fletcher, architects, was followed, and the result is that there is a striking contrast between the wretched ladder-shed, in which post-mortem examinations have been held by the aid of a dark lantern, and the present erection at the other end of the churchyard.

The erection of a mortuary being determined upon, much trouble is frequently experienced before a suitable site can be obtained, so strong a feeling existing in many localities against such buildings being prominently situated, that owners of houses in any street in which one might be erected would consider their property greatly deteriorated in value.

The selection in the present instance of the churchyard for a site, whilst obviating this difficulty, yet presented others from the limited area of ground at disposal, and the desirability of avoiding any injury to the general appearance of the church and its surroundings. The church itself, though neither architecturally beautiful nor of large dimensions, yet presents an interesting and venerable appearance.

The mortuary is situated eastward of the church, and is approached by an inclined path, with a turfed slope on each side.

The building is sunk 3 ft. in the ground, and has an air-chamber running entirely round it, ventilating-grates being inserted at intervals. The walls are of Kentish rag and Portland stone; the roof is of brickwork, cemented. There is also an iron skylight, glazed with rough plate. Internally the walls are of Portland cement, with a smooth face; the floor is of planed slate, and there is a solid slate table for post-mortem purposes. Water is laid on by means of one of Dalziel's patent regulating taps, by which a constant supply is obtained, without the uncertainty and loss of space which a cistern necessitates: arrangements for draining, of course, exist.

In the wall of the end opposite the door brackets are placed, affording accommodation for four coffins. The dimensions are but 13 ft. by 9 ft. The total cost has been about 236*l.*, the Vestry thinking it inadvisable, in the first place, to make a building, chiefly set apart for the reception of the bodies of persons meeting death from accident or otherwise, present an appearance which might, from the bareness of its aspect, pain the feelings of friends and relatives; and, secondly, the situation of the building demanding some architectural effect, they very wisely instructed the architects to give the structure an agreeable appearance.

SIR JOHN THWAITES, OF THE METROPOLITAN BOARD OF WORKS.

WE regret to announce the death of Sir John Thwaites, the Chairman of the Metropolitan Board of Works, which occurred on Monday morning, the 8th inst., about three o'clock, at his residence, Meaburn House, Upper Richmond-road, Putney, after an illness of a few days' duration. He was in the fifty-sixth year of his age, and was born at Meaburn, Westmoreland. He was the son of the late Mr. Christopher Thwaites, of Toddy Gill Hall, in the county of Westmoreland; his mother was Hannah, daughter of a Mr. John Smith. In early life, having received his education at a school at Reagill, in his native county, he entered business in London, and was for many years a draper and woollen merchant in the Borough and in Oxford-street. While thus engaged, he was frequently employed on Boards of parochial committees in the metropolis, and about eighteen years ago was nominated as one of the members of the Metropolitan Commission of Sewers, in which he sat as the representative of Southwark. In 1855, he was chosen the first chairman of the newly-established Metropolitan Board of Works. In that capacity it has fallen to his lot to superintend most of the important improvements in the streets, public buildings, and drainage of the metropolis; and it will be remembered that he received the honour of knighthood in 1865, upon the completion of the main drainage works, on the subject of which Sir John Thwaites had then recently published a work entitled "A Sketch of the History and Prospects of the Metropolitan Drainage Question." One of the last appearances of Sir John Thwaites in public was on the occasion of the recent opening of the Victoria Embankment, where we saw him in apparently good health. Sir John, who was a magistrate and a deputy-lieutenant for Middlesex, and also a magistrate for Surrey, was twice married—first, in 1836, to Harriott, daughter of Mr. William Bardwell, of Uggeshall, Suffolk; and, secondly, in 1861, to Eliza, daughter of Mr. Daniel Woodruffe, of Harwich, and widow of Mr. B. Carington, M.D. He has left three sons and a daughter.

Sir John was essentially a self-made man, and in his passage upwards has managed to make only friends. He discharged his duties as Chairman of the Board of Works admirably, and has endeared his memory amongst the officers of the Board by his integrity, consideration, and kindness.

Opening a People's Park at Manchester.

The mayor, corporation, and people of Manchester have been engaged in opening a new People's Park for the townships of Hulme and Chorlton-upon-Medlock (south-west of the remaining part of the city). About 60 acres had been recently purchased by the corporation, and converted into this public park, at a cost of something like 60,000*l.*, which is more than the cost of the other three,—namely, Peel Park, Queen's Park, and Philip's Park. The new one has been named the Alexandra Park.

ART-UNION OF LONDON EXHIBITION.

THE pictures selected by the prize-holders of 1870 are now on view in the Gallery of the Water-colour Institute, Pall-mall, where they will remain on view till the 27th inst. We have already given a list of the principal pictures bought. The highest prize, that of 200*l.*, which has fallen to the lot of Mr. C. T. Mellick, is represented by Mr. E. Crowe's well-known picture of "The Vestal," from the Royal Academy. Mr. A. B. Wyon, to whom fortune assigned the favour next in value, has chosen from the same collection a romantic landscape by Mr. C. J. Lewis, of the estimated value of 150*l.* The following are the more important of the other prizes:—"The Jungfrau from the road to Murren," by Mr. S. Hodges, from the New British Institution; and "Limberg, with the Cathedral of St. George, on the Lahn," by Mr. E. Richardson, from the Water-colour Institute—100*l.* each; "Henry II. of France and Diana of Poitiers witnessing the Execution of Protestants," by Mr. A. H. Tourrier, from the Royal Academy—75*l.*, the price of the picture being 150*l.*, and the winner paying the difference; "Highland Cattle going South," by Mr. H. Garland, from the Royal Academy—75*l.*; "The Stile," by Mr. W. Bromley, from the Suffolk-street Gallery—60*l.*; "Blue Bells," by Mr. H. Wallis, from the New British Institution, a charming picture, selected by Mr. J. Dickson—70*l.*; "Glen Etive, near Glencoe," by Mr. J. Docharty; "Moonlight on the Coast," by Mr. A. Gilbert; and "Ophelia," by Mr. H. Selous, all from the New British Institution; "River Rance, Dinan, Brittany," by Mr. F. T. Lott, from the Suffolk-street Gallery; "A Mountain Stream, Aber, North Wales," by Mr. J. Taylor, from the Royal Academy, and "Temple Weir, on the Thames," by Mr. A. A. Glendening, from the Society of British Artists. Other pictures bear the names of Peel, J. C. Thom, Pyne, Hayllar, J. Fahey, J. A. Fitzgerald, W. Callow, E. A. Goodall, J. J. Jenkins, Nattel, Thornycroft, Weekes, J. J. Wilson, &c.

SCHOOL FOR WEST LONDON, ASHFORD, MIDDLESEX.

THE first stone is to be laid this Saturday, the 13th.

The Poor-law Board having determined to remove the pauper children at present located in the workhouses belonging to the Fulham Union, the parish of Paddington, and to the St. George's Union, and to provide for their accommodation and education in schools separated from the parent establishments, created a district Board, under the title of the "West London School District." The Board of management then called into existence advertised for a site, and after consideration of those submitted for their inspection, selected a plot of land containing 48½ acres, situated at Ashford, in the county of Middlesex. The Board next proceeded to obtain designs for the proposed buildings, by offering premiums to a limited number of architects, who were invited to send in their plans in competition; and after deliberation they ultimately selected a design prepared by Mr. H. H. Collins, architect.

According to this plan, now commenced, the frontages of the buildings are placed parallel with the railway, so as not to encroach too much on the land, which will be used for farming purposes.

The main building is approached from an external corridor by a central hall, on the left of which are the porters' rooms, contiguous to the superintendent's apartments, which are so positioned as to command the supervision of the whole establishment. On the right is the waiting-room. Adjoining the waiting-room are the clerk's and superintendent's offices, which immediately adjoin the board-room. The dispensary and an apartment for ministers of religion are situated right and left of the central official block.

The dining-hall, 100 ft. by 50 ft., is situated in the centre of the building. The culinary department (which is placed at the rear of the dining-hall) includes a kitchen, scullery, bake-house, larders, dairy, bread and cutting-up store, cook's room, &c. At the extreme end of the administrative block is the store-keeper's department, with separate approach for tradespeople.

The laundry and engineer's departments are detached from the main building, for the prevention of accident by fire. The boiler-house, coal-